GOVERNMENT OF GHANA

MINISTRY OF SANITATION AND WATER RESOURCES

Liquid Waste Management Strategy for Urban Areas in Ghana

Launched: April 2023

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Acknowledgments

The National Liquid Waste Management Strategy for Urban Areas in Ghana is a result of a sector-wide collaborative effort and a multi-stakeholder consultation among sector practitioners including relevant Ministries, Departments, and their allied Agencies, Metropolitan, Municipal, and District Assemblies (MMDAs), Development Partners (DPs), Civil Society Organisations (CSOs) and Private companies.

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Foreword

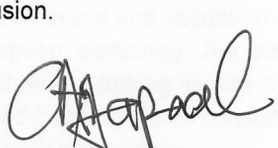
According to the 2021 Population and Housing Census conducted by the Ghana Statistical Service, almost 44% of households living in Urban Areas have access to basic sanitation services. Given the strong linkages between sanitation and improved health outcomes and efforts being made by the Ministry of Sanitation and Water Resources in ensuring everyone has access to basic sanitation in Ghana, the country's targets on Sustainable Development Goals (SDGs) offer us yet another opportunity to do more in the area of liquid waste.

To address the challenges of the sector and operationalize the strategic focus of the Ministry of Sanitation and Water Resources, created in 2017 with a focus on improving service provision and providing a more strategic focus for the sector, the Liquid Waste Management Strategy in Urban Areas in Ghana has been developed. The Strategy elaborates on the needed arrangements for safe Liquid Waste Management in urban Ghana. A similar process was adopted to develop a National Solid Waste Management Strategy,

This document draws on lessons learnt from the implementation of past and on-going projects, and outcomes of several stakeholder consultations. This Strategy was developed through a wide consultative process with active participation of sector stakeholders from relevant Ministries, Departments, and their allied Agencies, Metropolitan, Municipal, and District Assemblies (MMDAs), Development Partners (DPs), Civil Society Organisations (CSOs) and Private companies. The strategy document will serve as a working document and provide direction and guidance for all stakeholders in the Environmental Sanitation and Hygiene sector in Ghana.

The Strategy presents a framework for planning and delivery of liquid waste management services in Ghana. It will specifically, ensure; the provision of adequate and safely managed Environmental Sanitation and Hygiene facilities for urban residents, paying special attention to women, girls, the disabled, and the poorest; support to the private sector to deliver sustainable Environmental Sanitation services and related effective governance system at National, Regional, and MMDA levels.

The document proposes key strategies for ending open defaecation, increasing access to basic and safely managed sanitation services, and improving law enforcement. The proposals have been organised under the following thematic areas: i) Enabling Environment; ii) Demand Creation and Behaviour Change Communication; iii) Technology Options; iv) Service Delivery, Business Development, and Financing; v) Monitoring, Evaluation, and Learning; and vi) Social Inclusion.



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Minister

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Executive Summary

Over the last decade, sanitation has received increased attention from the Government of Ghana in a bid to improve coverage and access to services in urban areas. However, these interventions have not yielded the desired results - for example, only 25% of the urban population have access to improved sanitation facilities, and 11% of the urban population are practicing open defaecation (GSS, 2018). In the two major cities of Kumasi and Accra, up to 50% of faecal sludge is not properly managed (Furlong and Mensah, 2015; IWMI, 2015). This could lead to possible high levels of faecal contamination via multiple exposure pathways (Robb et al, 2017), which have dire consequences on public health.

This strategy is aimed at creating "an urban and peri-urban environment, where all residents have access to safely managed sanitation and hygiene by 2030". This is in line with SDG 6, target 6.2, which aims at "achieving access to adequate and equitable sanitation and hygiene for all residents and ending open defaecation, paying special attention to the needs of women and girls and people in vulnerable situations by 2030". In particular, the strategy focuses on the needs of low-income communities and emerging urban areas. The strategy aims at the provision of adequate and safely managed sanitation and hygiene facilities for 23 million urban residents. The document also deals with the provision of adequate support to the private sector to deliver sustainable liquid waste management services, and effective WASH governance at national, district, and sub-district levels.

The strategy was developed through a participatory process led by the Ministry of Sanitation and Water Resources at the national level. The strategy draws on the experiences and lessons from past and ongoing urban sanitation projects through an extensive desk review. This was then followed by a diagnostic survey that included about 1800 households, 42 MMDA officials, 9 focus groups, 24 latrine artisans, and 15 waste management companies. The diagnostic activities also involved national-level consultative meetings with private sector players and Development Partners operating in the urban sanitation space. This was then followed by a comparative analysis of the concepts, implementation processes, and approaches used by the various urban sanitation projects/programmes. The approaches and processes were subjected to a SWOT analysis using critical evaluation criteria such as effectiveness, efficiency, suitability, sustainability, and scalability. The process also involved several national-level consultative meetings and workshops, which allowed for input into the strategy, validation of the outcomes, and a review and validation of the proposed strategies. Critical among these were the national inception workshop, the national validation workshop, and the workshop for the National Technical Working Group on Sanitation (NTWGS). This strategy is, therefore, a result of a broad-based national consultative process of diagnosis and programming.

The National Liquid Waste Management Strategy draws from the National Environmental Sanitation Strategic Action Plan (NESSAP), but with a special focus on urban and peri-urban areas. The National Liquid Waste Management Strategy is purposed to provide operational guidance to all actors within the urban sanitation space. Based on the strategic focus of the government for the sector and the sustainable development goals, as well as best practice principles (such as cost-effectiveness, policy coherence, sustainability, and inclusiveness), the strategy document is organised under six (6) main thematic areas as follows:

1. **Enabling environment:** the strategy seeks to improve sanitation governance at all levels of the public administration structure in Ghana, and also to create a conducive policy and working environment for the private sector to flourish. To achieve these, the strategy proposes the following interventions:

- Establish the National Sanitation Authority and accompanying National Sanitation Fund
- Develop a PPP strategy to guide the private sector participation and investment in sanitation.
- Build a strong financing mechanism at the MMDA Level for sanitation to allow for better budgeting and decision making especially in contract management.
- Invest in sanitation infrastructure and services at MMDA levels (e.g., treatment plants)
- Strengthen the human resource capacities of MMDAs to govern sanitation activities and deliver services to the urban population by establishing Waste Management Departments in Municipal and District Assemblies and resource them with the required number of sanitation engineers and Environmental Health Officers.
- Support the strict enforcement of bye-laws, standards, and regulations related to liquid waste management by Establish Sanitation Courts or specify days for adjudication of sanitation cases in all MMAs, and also build the capacities of Environmental Health Officers to prosecute sanitation cases. Develop and implement non-custodial sentences or even non-financial sentences (such as work in the public interest).

2. **Demand creation and communication for behaviour change:** Here, the strategy aims at shaping behaviour and attitudes and thereby driving up the demand for sanitation facilities, services, and products along the entire service delivery chain. Three broad approaches, covering the Capture and Containment, Emptying and Transportation, and Treatment and Reuse components of the urban sanitation chain, are proposed:

Capture and Containment:

The proposed strategy is driven by both the Civic Structure (MMDAs) and beneficiary communities, hence the code name "Civic Champions and Community-Led Sanitation" (3CLS) Model. To drive up the demand for household toilets and end Open Defaecation, the strategic approach involves:

- Conduct a Rapid Community WASH Survey, Stakeholder Mapping, and Communication Surveys to inform interventions.
- Build the Capacity of Civic Players, Community Volunteers/Champions (including media), and Indigenous Latrine Artisans/Companies
- Organise stakeholder engagements, and sensitisation activities in communities and institutions using traditional and new media.
- Declare a Moratorium which defines a minimum period by which all households in a specific community, city, or MMDA, has to build a toilet facility.
- Intensify the routine inspection, education, and enforcement of sanitation bye-laws (including prosecutions of offenders).
- Organise quarterly "cleanest electoral area" competition and publish results in the form of a league table.

Emptying and Transportation

- Conduct a baseline survey and Map emptying services in the MMA
- Register, certify, and assign emptying service providers within designated zones
- Organise key stakeholder meetings and training workshops for emptying service providers and other key stakeholders on the new emptying/transportation structure and service guidelines.
    - Support service providers to formalise, rebrand services, and standardize charges using Technology and e-cash:
    - Routinely monitor emptying and transportation services, and enforce bye-laws

Treatment and Reuse:

- Conduct market surveys for existing faecal sludge products and treatment facilities
- Organise stakeholder engagement activities (including state & non-state agencies)
    - Build the capacity of treatment firms and marketing outlets to be able to effectively market the products
- Rebrand products, price competitively, and organise direct sales activities
- Negotiate and sign supplier agreements with prospective (state & non-state) clients.
- Organise public awareness campaigns on the circular economy
- Routinely Monitor and Enforce Regulations

3. Supply chain and services delivery, business development, and financing: This component of the strategy is designed to: facilitate the development and provision of sanitation services that respond to the peculiar sanitation needs of different socioeconomic segments of the urban population; promote sanitation as an economic good and generate interest from investors; and facilitate access to a mix of appropriate alternative financing mechanisms for sanitation infrastructure and services. The strategy proposes the following interventions for service delivery, business development, and financing:

Supply Chain and Services Delivery:

- Develop Guidelines and set service standards to regulate both public and private sanitation businesses/service providers.
- Link sanitation service providers to technical/ vocational training schools and research institutions for knowledge sharing.
- Provide specific technical and sanitation business support services to the private sector

Business Development:

- MSWR should strengthen the national campaign on improving sanitation, through awareness creation and education on the need to own a toilet.
- Build partnership with sanitation NGOs/ CSOs implementing sanitation projects and programmes to provide support to sanitation businesses
- Provide tax incentives to Sub-Project Implementers (SPIs)/ Toilet Construction Firms and local manufacturers of toilet products due to the competitive nature of the construction sector
- Facilitate existing learning alliance platforms towards providing capacity building and knowledge sharing.
- Partner DPs to work towards delivering affordable but appropriate toilet options for poor urban households

Financing:

- Develop Guidelines for subsidy for the Low-Income Urban dwellers, taking a cue from the existing rural version of similar guidelines, anchored on the principles of transparency, fairness, and efficiency
- Provide financial awareness campaigns, training, and education to expose consumers to a wide range of sanitation finance options, including accessing loan/microcredit to build latrines ('toilet loans')
- Provide guarantees (through the National Sanitation Fund or other instruments) to incentivize financial institutions to offer credit facilities at lower rates to households, property owners, and businesses for sanitation investments
- Leverage on funds from central government (National Sanitation Fund), DPs, Private Foundations and CSR Funds to provide full subsidy support targeted at the vulnerable population
- Develop Guidelines for PPP arrangements for sanitation investments
- Advocate for increased allocation of central government transfers and Internally Generated Funds (of MMDAs) for investment in waste disposal, treatment, and reuse facilities.

4. Technology options: The strategy seeks to build capacities for technical knowledge and good quality standards in sanitation service delivery, and also ensure the promotion and acquisition of settlement appropriate and cost-effective technologies. To achieve these objectives, the strategy broadly proposes the following:

- Address the whole sanitation chain in terms of technologies, through a sanitation system.
- Support the promotion and acquisition of sanitation technologies that are efficient and cost-effective, and that can be easily managed and maintained by households and institutions (including MMDAs).
- Support MMDAs to zone cities and towns into larger sanitation systems to guide technologies adoption, adaptation, and deployment.
- Build a strong partnership between sanitation practitioners and research institutions to promote research and innovation, particularly in the area of Inclusive and low-cost sanitation technologies.

5. Monitoring, Evaluation, and Learning: The strategy described the M&E systems, standards, and indicators that are required by local, regional, and national partners for the tracking of progress and impact of interventions. Some key recommendations are to:

- Support the establishment of a Sector Information System (SIS), and the use of the Expanded Sanitary Inspection and Compliance Enforcement (ESICOME) Mobile Applications (ESICApps) as the data collection tool for urban sanitation.
- Ensure the adoption and the use of standardised indicators (Golden Indicators) and reporting mechanisms for all urban sanitation projects.
- Develop and promote indicators that measure service provision and governance aspects of sanitation service delivery.
- Support and guide organisations implementing urban sanitation projects to organise at least one district or national level sector learning activity.

6. Social inclusion: The strategy seeks to ensure that women, children, the disabled (including the elderly), and the poorest in urban areas have access to adequate and safely managed sanitation services and facilities. To achieve this objective, the strategy proposes the following key interventions:

- Advocate for the provision of Inclusive household and institutional sanitation facilities
- Promote innovative Inclusive sanitation facilities and services and encourage the use of universal principles in designing facilities.
- Coordinate with other MDAs, such as Ministries of Works and Housing, Ministry of Education, Ministry of Health, etc., to ensure the construction of Inclusive urban sanitation facilities.
- Ensure the use of Inclusive indicators in the Sector Information System and the M&E framework of the MSWR
- Support the adoption and use of the proposed targeting mechanisms, particularly aspects related to community-based targeting (which is to be led by frontline officers in MMDAs
- Promote low-cost (but durable) safely managed toilet options.

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Abbreviations and Acronyms

Acronym	Definition
BAC	Business Advisory Centre
BCC	Behaviour Change Communication
BDS	Business Development Support
CBO	Community Based Organisation
CIC	Community Information Centres
CLS	Community-Led Sanitation
CONIWAS	Coalition of NGOs in Water and Sanitation
CSC	Community Sanitation and Communications
CSO	Civil Society Organisation
CSR	Corporate Social Responsibility
CSS	Community Sanitation Status
DCE	District Chief Executive
DHD	District Health Directorate
DICCS	District Inter-Coordinating Committee on Sanitation
DP	Development Partner
DPO	Disabled Peoples' Organisations
DWD	District Works Department
DWST	District Water Sanitation Teams
ECG	Electricity Company Ghana
EHA	Environmental Health Assistant
EHO	Environmental Health Officer
EHSD	Environmental Health and Sanitation Directorate
EP	Elderly Persons
EPA	Environmental Protection Agency
ESICApps	Expanded Sanitary Inspection and Compliance Enforcement Mobile Applications
ESICOME	Expanded Sanitary Inspection and Compliance Enforcement
ESPA	Environmental Service Providers Association
FSM	Faecal Sludge Management
FST	Faecal Sludge Treatment
GAIDA	Ghana Agri-Input Dealers Association

GAMA	Greater Accra Metropolitan Area
GIS	Geographic Information System
GoG	Government of Ghana
GSA	Ghana Standard Authority
IGF	Internal Generated Fund
SIS	Sector Information System
JMP	Joint Monitoring Programme
KAP	Knowledge, Attitudes and Practices
MDA	Municipal/District Assembly
MESSAP	Municipal Environmental Sanitation Strategy and Action Plan
MESTI	Ministry of Environment, Science, Technology, and Innovation
MFI	Micro-Finance Institutions
MLGDRD	Ministry of Local Government, Decentralisation and Rural Development
MMAs	Metropolitan and Municipal Assemblies
MMDAs	Metropolitan, Municipal and District Assemblies
MoE	Ministry of Education
MOFA	Ministry of Food and Agriculture
MOTI	Ministry of Trade and Industry
MSWR	Ministry of Sanitation and Water Resources
MWH	Ministry of Works and Housing
NADMO	National Disaster Management Organization
NBSSI	National Board for Small Scale Industries
NGO	Non-Governmental Organisation
ODF	Open Defaecation Free
PHC	Population and Housing Census
PPP	Public-Private Partnership
PTA	Parent Teacher Association
PWD	Persons with Disability
RBF	Results Based Financing
RCSA	Rapid Community Sanitation Assessment
SDG	Sustainable Development Goal
SHEP	School Health Education Programme
SIS	Sector Information System

SSAP	Sectional Sanitation Action Plans
UDDT	Urine Diversion Dehydrating Toilets
UNICEF	United Nations Children's Fund
USSS	Urban Sanitation Service Standards
VIP	Ventilated Improved Pit
WASH	Water, Sanitation and Hygiene
WATSAN	Water and Sanitation
WHO	World Health Organisation
WST	Water and Sanitation Team
WSUP	Water and Sanitation for the Urban Poor

1. BACKGROUND AND STRATEGIC PICTURE

1.1 Background

The world is experiencing rapid urbanisation, and the number of people living in cities is projected to increase by 50 percent between 2016 and 2045 – i.e., from 4 to 6 billion (Tayler, 2018). Ghana, like most low-income and lower-middle-income countries, is urbanizing rapidly – for the first time in 2010, more than half of its population lived in urban areas (GSS, 2014 – Report on Urbanisation in Ghana). This has considerable implications for urban development and management, more especially on urban waste management. In Ghana, basic sanitation remains poor, in the urban areas. The Ghana Statistical Service (2018) reports that only 25% of urban households in Ghana have access to "basic" sanitation services with about 11 percent of the population practising open defecation. Despite significant improvements in water coverage, sanitation continues to lag and the country failed to attain its sanitation coverage under the Millennium Development Goals (MDG). The Sustainable Development Goals (SDG) present a more striking challenge for Ghana. Towards achieving target 6.2 of the SDGs, Ghana is expected to provide safely managed sanitation and hygiene services for all residents by 2030.

Ghana's SDGs Indicator Baseline report reveals that, in most towns and cities in Ghana, an estimated 72% to 97% of liquid waste is not safely managed (National Development Planning Commission (NDPC) and Ghana Statistical Service (GSS), 2018). This has dire consequences for public health and the general wellbeing of the populace. The existing systems and structures for delivering sanitation services in Ghana, especially in urban areas often struggle to meet the demands of urban households. It is worthy to note that the rapid population growth has over the years not been commensurate to the development of liquid waste management infrastructure and services. Consequently, this has reached an extent that is overwhelming for most city authorities. Currently, most cities and towns in Ghana are without sewerage, even where they exist, it is limited to the few areas in the city, like in the case of Accra and Kumasi. The 2018 Ghana Multiple Cluster Indicator Survey Report shows that only two percent of the national population is connected to sewerage (Ghana Statistical Service (GSS), 2018). Further analysis shows that these are found in only 6 out of the 16 regions in Ghana.

Over the years, many urban households coping mechanisms have been to provide their sanitation facilities, which are largely on-site sanitation systems with related maintenance and faecal sludge management (FSM) challenges. In the last two decades, different technologies have been introduced in Ghana – consisting of various dry and flush systems, which have peculiar requirements for ensuring safe faecal sludge management (FSM) (UNICEF, 2016). An analysis of the sanitation value chain revealed that the sanitation sector is underdeveloped, with the most dominant focus on the 'containment stage' to the detriment of the end side of the value chain. Most urban sanitation projects in Ghana have been on a pilot or ad hoc basis, largely donor-driven, but the lessons have not been scaled up nationally. The sector Ministry has indicated that it supports the use of multiple approaches in the delivery of sanitation services and infrastructure as the needs and situations of various segments of the population differ.

Given the strong linkages of sanitation and improved public health outcomes and socioeconomic development, it is imperative to find sustainable solutions to scale up safely managed sanitation and hygiene services. In 2012, a study conducted by the Water and Sanitation Program (WSP) revealed that Ghana loses US$290 million each year due to poor sanitation. Again, in 2016, the

Global Burden Disease study in Ghana, revealed that deaths related to water and sanitation contributed to about 3.5% of deaths in Ghana (UNIDO, 2019). The thrust of the liquid waste management challenges that has bewildered the country includes "inadequate financing of sanitation; poor sanitation infrastructure and waste management systems; inadequate policy direction and institutional coordination; high prevalence of open defecation; and limited capacity at the Metropolitan, Municipal, District Assembly (MMDA) level to adequately address sanitation concerns" (GoG, 2017 - The Coordinated Programme of Economic and Social Development Policies 2017-2024).

Although in Ghana, Municipal waste management remains one of the core responsibilities of MMDAs, there is no requisite support and direction for operationalizing this mandate. Even though the Environmental Sanitation Policy 2010 makes proposals for access to toilets and the management of liquid waste across the value chain, it does not directly provide the necessary technical guidelines for the sanitation services delivery. The Environmental Sanitation Policy, 2010 required the sector ministry, to "issue technical guidelines from time to time specifying which technologies may be used, including design parameters and recommended operating procedures" for liquid waste management in Ghana (Ministry of Local Government and Rural Development (MLGRD), 2010 pp.36). The National Environmental Sanitation Strategic Action Plan (NESSAP) was developed to provide MMDAs with direction on what they need to do and most importantly built their capacities to develop their own Metropolitan, Municipal, or District level Environmental Sanitation Strategic Action Plans, which are expected to be costed and integrated into the Medium-Term Development Plans. However, these guidelines provided in the NESSAP have not been effectively implemented.

Sanitation is lagging as a result of low prioritisation by MMDAs coupled with inadequate funding. Again, historical shifts in liquid waste management in Ghana – both in terms of policy shifts and technological changes have necessitated the need for this Strategy document. This strategy document provides contemporary guidance on handling liquid waste management in urban and peri-urban areas in Ghana. Notwithstanding, in recent times the Sanitation sector in Ghana has received a lot of attention, especially due to the creation of a dedicated Ministry for Sanitation and Water Resources (MSWR) in 2017 with focus on service provision and providing a more strategic focus for the sector. In line with this, the new sector Ministry set out to develop this document as an operational strategy to be used at the MMDA level and by all sector practitioners in Ghana. The document deals with the provision of adequate support to the private sector to deliver sustainable liquid waste management services, and effective governance at National, District, and Sub-district levels.

1.2 Strategic Vision Statement

The national liquid waste management model, as envisioned by the Ministry of Sanitation and Water Resources is aimed at creating "**an urban and peri-urban environment, where all residents have access to adequate and sanitation and hygiene by 2030**". This is in line with Sustainable Development Goal 6, Target 6.2, which is aimed at achieving access to adequate and equitable sanitation and hygiene for all residents and ending open defaecation, paying special attention to the needs of women, girls, and people in vulnerable situations by 2030.

1.3 Strategic Objectives

The overall objective of this strategy is to incrementally provide access to adequate and equitable sanitation and hygiene for 23 million[1] people in urban and peri-urban Ghana by 2030. Specifically, the strategic objectives shall include:

- Ensuring the provision of adequate and sustainably managed sanitation and hygiene facilities for 23 million urban residents, paying special attention to women and girls and people in vulnerable situations.
- Ensuring the provision of adequate support to the private sector to deliver sustainable liquid waste management services.
- Ensuring effective WASH governance at all levels.

1.3.1. Target

The National Liquid Waste Management Strategy adopts the SDG target on sanitation as shown in Box 1.

Box 1. Strategic targets and linkage with SDGs

> **SDG Target 6.2**: By 2030, achieve access to adequate and equitable sanitation and hygiene for all, and end open defecation, paying special attention to the needs of women and girls and those in vulnerable situations.

Fundamentally, there should be a transition in access to infrastructure and services, and hygiene practices towards achieving this target. The sanitation service ladder shown in Figure 1 offers the possibility to gradually move towards safely managed sanitation services.

SERVICE LEVEL	DEFINITION
SAFELY MANAGED	Use of improved facilities that are not shared with other households and where excreta are safely disposed of in situ or removed and treated off-site
BASIC	Use of improved facilities that are not shared with other households
LIMITED	Use of improved facilities that are shared with other households
UNIMPROVED	Use of pit latrines without a slab or platform, hanging latrines or bucket latrines
OPEN DEFECATION	Disposal of human faeces in fields, forests, bushes, open bodies of water, beaches or other open places, or with solid waste

Figure 1: SDG Ladder for Sanitation Services (WHO&UNICEF, 2021)

1.3.2. Geographical focus

The strategy will focus on localities in urban and peri-urban areas in Ghana. Based on the SDG targets, the models will also focus on delivering sustainable sanitation services to all 23 million people who will be living in urban areas in 2030. The model will also strategically focus on the needs of low-income communities and emerging urban areas.

[1] Projected 2030 using 2010 growth rate

1.4 Strategic Focus and Pillars

Sector actors, projects, and funders have different areas of focus along the service chain of liquid waste. One of the objectives of this document is to provide a wider point of view to actors to encourage more integrated interventions or at least, better coordinated with upstream or downstream actions carried out by other actors. For clarity, the document covers the sanitation service chain through 6 thematic areas:

Table 1: The Seven Thematic Areas of the Strategy

Thematic area	Content
Demand Creation and Behaviour Change Communication	This will focus on approaches to raise awareness, change behaviour and build new social norms. It includes social and product marketing, behaviour change communication, and social norm campaigns among others.
Technology Options	This section provides information on available and sustainable technologies suitable for urban areas.
Supply Chain and Services Delivery	This section focuses on the supply chain for services and materials, and management of the delivery of sanitation in urban areas.
Business Development and Financing	This section focuses on the creation of viable business models and private sector participation in sanitation delivery, and the utilization of innovative financing solutions to fund sanitation, especially for the urban poor.
Enabling Environment	This section relates to the policies, rules, and regulations for participation or any governance model that provides better access to the whole sanitation chain.
Monitoring, Evaluation, and Learning	This covers the systems, standards, and indicators required by local, regional, and national partners for better planning, monitoring, and evaluation.
Social Inclusion	This cross-cutting thematic area is aimed at improving the relevance, sustainability, and equity of sanitation services.

1.5 Guiding Principles

The various recommendations, interventions, and strategies proposed in this document are guided by the principles explained in Table 2.

Table 2: Guiding Principles

N°	Principle	Description
1.	Focused on Public Health	The basic litmus test for the strategies must be whether they will directly or indirectly “resolve the liquid waste management problems and will ultimately improve health”. Each proposed model must pass this test.
2.	Conformity with Policy, Legal and institutional arrangements	The proposals in this strategy must fit within the ambit of existing legal, institutional, and policy frameworks.
3.	Cost-Effectiveness	The proposed strategies must produce the most desirable results at affordable prices to the citizenry.
4.	Focused on MMDA Financing	Although the strategies have a national focus, the proposals must be such that they can be implemented and funded by MMDAs.
5.	Sustainability	The proposed services and strategies must be established for today and beyond.

6.	Replicability and Scalability	The proposed strategies must be in the form that can be implemented at scale to cover all MMDAs.
7.	Inclusiveness	The strategy must take cognisance of the special needs of the vulnerable and excluded groups within the urban sanitation ecosystem. The proposed models must therefore focus on identifying and addressing the sanitation needs of the poor, women, children, the disabled, and elderly within the urban space.
8.	Embedded Capacity Building Services	The strategy must enhance or strengthen the existing institutional structures for urban sanitation management. Embedded in the proposed models must be innovative capacity-building activities for staff of existing sanitation-related state agencies and service providers.
9.	Promotion of Private Sector Participation and Competition	The strategy must recognise the market as the best tool for sustainable sanitation service delivery. The proposed models must be inherently market and private-sector-oriented.
10.	Citizen Participation and Accountability	The strategy must recognise the role of citizens and must make provision for their participation in the planning, implementation, monitoring, and evaluation of activities along the sanitation value chain.
11.	Non-partisan political consideration	Proposed strategies must be devoid of Ideological or partisan considerations.
12.	Incremental - Gradual but bold	In the face of resource constraints and the complexity of the challenges confronting the urban sanitation subsector, the roll-out of the strategy must be bold but gradual.

1.6 Purpose of the National Liquid Waste Management Strategy

1.6.1 Target Users

This document is intended for all sector players who design programmes and develop interventions in the liquid waste management sub-sector:

i. Government institutions at different levels including MMDAs.
ii. Implementing Partners at the national level (NGOs, consortiums, consulting firms, etc.).
iii. Implementing Partners at the international level (INGOs, planning to implement or implementing urban sanitation projects).
iv. Development Partners (Donors, INGOs, agencies, planning to fund or funding urban sanitation projects).
v. Civil Society Organisations/ Interest groups/ Advocacy groups working in urban sanitation.
vi. Private sector: financial institutions, entrepreneurs, manufacturers.

1.6.2 Description of the NLWMS

In this document, Liquid Waste Management refers to household liquid waste, excluding industrial and commercial waste. This strategy document refers to experiences, approaches being implemented in the country. This document has been developed to serve as a reference guide on best practices when implementing urban sanitation projects. It will guide the targeted users mentioned above. The National Liquid Waste Management Strategy is a living document with room for adaptation and innovation. The strategy document focuses on liquid waste from households and institutions. It also forms part of the National Waste Management Strategy that

has been put together by the sector ministry, which constitute the National Solid Waste Management Strategy, and the strategy on Special and Medical waste.

2. ENABLING ENVIRONMENT FOR LIQUID WASTE MANAGEMENT

2.1 Introduction

The complexities of dealing with sanitation services delivery in most urban areas cannot be overemphasized. There is an array of stakeholders that are involved in the planning, investment, and management of sanitation from the national level up to the community level. This requires a framework that establishes the actors, institutions, their roles, responsibilities, rules, plans, strategies, and how all these elements are coordinated, and actors regulated towards effective sanitation service delivery. Thus, creating an appropriate enabling environment serves as a key step in pivoting efforts towards accelerating improvements in liquid waste management. The enabling environment, as it is considered here, is supported by five components, namely, *Sector Policy; Institutional Arrangements; Sector Financing; Planning, Monitoring, and Learning; and Capacity Development* (as illustrated in figure 2*).* Each of these five pillars must be strong enough to support the implementation of a national strategy.

Figure 2: The Five (5) Components of Enabling Environment

2.2 Sector Policy and Strategy

2.2.1 Overview of Policies and Strategies for Liquid Waste Management

Several policies and strategies dealing with liquid waste management exist, and their main inputs to the sector are described in Table 3. Despite having several policies and strategies, implementation of these strategies has always had challenges. There is largely low prioritisation for liquid waste management at the MMDA level, thus the MMDAs focus their interest on solid waste management. The private sector has been very visible in sanitation service delivery, especially, in public toilets management or emptying services. In recent times, private sector players (e.g., toilet manufacturers and contractors, emptying and transportation service providers, and waste treatment companies) have been heavily involved in the delivery of

sanitation services along the urban sanitation chain. Going forward, private sector investments in the sanitation sector is seen as crucial to achieving the SDG targets.

In Ghana, the 2011 National Policy on Public-Private Partnerships (PPP) Strategy (which was supposed to provide guidance for Private Sector Participation) was launched. However, the national policy does not adequately address the needs of the sanitation sub-sector. The sector, therefore, needs a strong legal environment to guide private investment, innovation, and the development of new services.

Table 3: Existing Policies and Strategies for Liquid Waste Management in Ghana

Policy and Strategies	Key Points
Environmental Sanitation Policy (ESP)-MLGRD 2010	Covers all aspects of environmental sanitation, including solid waste, liquid waste, excreta, industrial wastes, healthcare, and other hazardous wastes.
	Recognizes the need to provide inclusive sanitation services, especially to protect the vulnerable, women, and children.
	Allocates responsibilities between ministries and local governments.
	Promotes Private Sector Participation (PSP) and NGOs' involvement in the delivery of sanitation services.
	Acknowledges the challenge of urban sanitation (including excreta management, referred to as 'liquid waste') and the lack of planning.
	Makes households responsible for financing their household toilet facilities.
National Environmental Sanitation Strategy and Action Plan (NESSAP)-MLGRD 2010	Recognizes that communal and public toilet facilities will continue to be an important aspect of excreta management for some time.
	Proposes franchising the management of public toilets and the provision of cesspit emptying services by private operators.
	Recognizes the need for appropriate low-cost treatment and disposal facilities for faecal sludge.
Draft Strategic Environmental Sanitation Investment Plan (SESIP) - MLGRD, 2011	Provides a financing plan for implementing the NESSAP.
	Proposes an increase in the annual allocation of the DACF to MMDAs to fund their financing gaps (from 7.5% to 15%) and 'ring-fencing the amount for environmental sanitation (including solid waste) programmes.
	Proposes the establishment of a national revolving fund for household sanitation to be managed by microfinance institutions.

2.2.2 Proposed Policy Reforms and Strategies for Liquid Waste Management

The following recommendations have been made towards policy reforms for improving liquid waste management in Ghana. The proposals have been presented based on critical actions required at the national level and those required at the MMDA levels.

a. **National Level:**

- ***Establishment of the National Sanitation Authority:*** A critical action required to improve sanitation service delivery is to establish the National Sanitation Authority (NSA), and an accompanying National Sanitation Fund (NSF) to accelerate improvement and investments in the Sanitation Sector. The National Sanitation Authority would be set up to regulate private sanitation service providers, ensure compliance with sanitation laws

and regulations, implement sanitation policies and programmes, establish, and manage the national sanitation fund, and provide responses to all other related environmental sanitation issues.

- ***Review and update all Environmental Sanitation Policies, Strategies, and Plans:*** As a first step, the Ministry of Sanitation and Water Resources (with the support of the Ministry of Local Government and Rural Development and the Ministry of Environment, Science, and Innovation) should lead the review of the Environmental Sanitation Policy (ESP). The Ministry should also support the review of national guidance documents such as the National Environmental Sanitation Strategy and Action Plan (NESSAP) and the Strategic Environmental Sanitation Investment Plan (SESIP). These revised policies must guide the coordination of sanitation interventions in the country.

- ***Develop a PPP Strategy for the Sanitation Sector:*** To guide private sector participation and investment in sanitation, the Ministry of Sanitation and Water Resources (with the support of the Ministry of Finance and Economic Development) should lead the development of a PPP strategy for the sanitation sub-sector.

b. MMDA Level:

- ***Review of MESSAP/DESSAP and its integration into MMDA MTDPs:*** All Assemblies (except the recently created Assemblies) have Metropolitan/Municipal/District Sanitation Strategy and Action Plans (M/DESSAPs) for sanitation delivery. These M/DESSAPs are integrated into the MMDA's Medium Term Development Plans and are costed for implementation. In reviewing their M/DESSAPs, it is important for MMDAs to take into consideration the current global development paradigm, national standards, and the trend of urbanisation. It must also include service requirements, the role of the private sector, and the roles of other key stakeholders in the MMDA. The plans must articulate financing models and technology, taking into consideration the special needs of all categories of people living in the MMDA (e.g., the poorest, women, children, persons-with-disability, etc.). The M/DESSAPs must also provide the framework for coordinating environmental sanitation programmes and investments in the district.

- ***Harmonise Sanitation Interventions within MMDAs:*** With MMDAs in charge of planning services and infrastructure, it is mandatory that other actors implementing urban sanitation projects liaise with the relevant MMDA in organising their interventions. The key to coordinating programmes and activities of stakeholders is to guide actors to align their programmes with the Assembly's MESSAPs/DESSAPs through Medium-term Development Plans/Medium-Terms Expenditure Framework (MTDP/MTEF). MMDAs must provide leadership to other actors operating in the district and ensure that their programmes and activities conform with national and district guidelines and standards. The MMDAs will achieve this by organising regular coordination meetings with the stakeholders through the establishment or strengthening of the existing Municipal/ District Inter-agency Coordinating Committee on Sanitation (M/DICCS).

- ***Support Private Sector Service Provision:*** MMDAs must develop guidelines and standards to guide the operations of the private sector in their jurisdiction, and this could include a simple Dos and Don'ts framework for easy understanding and implementation.

This should be developed as a chapter in the Medium-Term Development Plan in conjunction with the stakeholders in the municipality to facilitate their buy-in. This will serve as a way of announcing the opportunities within the MMDA for the private sector and how they can be engaged. For example, the Kumasi Metropolitan Assembly has clear guidelines on how to invest/ operate a public toilet facility in the metropolis.

- The role of private sector in infrastructure and services provision is critical to ensuring efficient and improved services delivery. The private sector will only invest if they are assured that operational challenges are few, the minimum infrastructure to support their operations is available, and that they can recoup their investments with returns. In this regard the MMDA must support the provision of critical sanitation infrastructure like treatment facilities. Another key strategy for private sector involvement is the prompt payment for services being delivered by private service providers.

- The MMDAs should sign up to innovative self-financing partnership arrangements under simple franchise agreements where the private sector comes in to develop liquid waste infrastructure and efficiently manages it to recoup their investment within an agreed period. Again, in such agreements, the MMDAs should not necessarily seek to take over the management of the facilities after the end of the initial arrangement. But they can transition into signing management service agreements to make sure the private sector continues to run the facility efficiently on behalf of the MMDAs. MMDAs can provide serviced lands (lands with adequate utilities) as their initial investments into such ventures.

- ***Enforce Appropriate Laws and Regulations:*** The legal and institutional framework for sanitation is virtually complete and adequate for the current and near-future stakes of the sector. At the national level, there are about five legal instruments, which if adequately enforced will help improve liquid waste service delivery at the household level. In addition, MMDAs are required to develop bye-laws to deal with specific environmental challenges in their jurisdictions. It is important for MMDAs to enforce their laws to the letter. This strategy also recommends enforcement tools, which can be used exclusively or jointly. Key among the proposed tools are as follows:
  - Declaration of Moratoriums: The moratorium period provides an opportunity for education on bye-laws, awareness creation, and reinforcement of the services offered by the private sector. An intensive communication drive, aimed at households and institutions, must be implemented within the context of the moratorium. After which, vigorous enforcement would be applied.
  - Set specific court days for adjudication of sanitation-related cases and define non-custodial sentences or even non-financial sentences (such as work in the public interest) for sanitation offenders.
  - Developing and implementing licensing regimes to register and monitor the operations of service providers (including toilet manufacturers or vacuum truck operators).

It is worthy to note that crucial for enforcement and regulation at the MMDA level are the following actions: supporting MMDAs to develop and gazette relevant bye-laws, support MMDAs to build the capacity of Environmental Health Officers in prosecution processes, support MMDAs with the

needed resources and logistics to support the activities and processes of enforcement management.

2.3 Institutional Arrangements

Ghana has a well-structured institutional set-up with clear lines of responsibility for WASH Services delivery. The delivery of services is decentralized, with national-level institutions providing policy, coordination, and harmonisation of programmes of agencies and departments, monitoring and evaluation, and research. Some of the institutions, their roles, and responsibilities are provided in Table 4.

Table 4: WASH Institutions and Stakeholders

Institution	Roles and responsibilities
Ministry of Sanitation and Water Resources (MSWR)	Its core mandate is to initiate and formulate water, environmental health, and sanitation policies considering the needs and aspirations of the people; undertake water and environmental sanitation development planning in consultation with the National Development Planning Commission (NDPC); and co-ordinate, monitor, and evaluate the efficiency and effectiveness of the performance of the sector.
Ministry of Local Government, Decentralisation and Rural Development (MLGDRD)	The Ministry of Local Government, Decentralisation and Rural Development (MLGRD) exist to ensure good governance and balanced development of MMDAs through the formulation of policies on governance, the development of sector plans, and the design of systems to set targets for and monitor the performance of Assemblies.
Office of the Head of Local Government Service (OHLGS)	The OHLGS undertakes recruitment of staff and provides administrative and management support to MMDAs towards the delivery of social services including sanitation.
Ministry of Finance (MoF)	Provides budgetary allocations and releases of funds to finance the sector programmes and activities
Ministry of Health (MoH)	Policies and programmes for the health sector including ensuring sustainable WASH services in Healthcare Facilities (HCFs)
Ghana Health Services (GHS) – Public Health and Health Promotion	Undertake health promotion activities towards the prevention of ill-health and conduct hygiene education which enhances the wellbeing of the communities and society at large.
National Development Planning Commission (NDPC)	Formulate and coordinate spatial and economic plans for Ghana and develop planning frameworks to guide the development of Medium-Term Development Plans of MMDAs.
Ministry of Education (MoE)	Provide policy direction, standards, and guidance to the delivery of WASH in Schools (WinS) services.
Ghana Education Services (GES) - School Health Education Programme	Developed minimum standards to guide sanitation delivery in educational institutions. Educate children in good sanitation and hygiene practices.
Environmental Sanitation Providers Association (ESPA)	Coordinates private sector environmental services providers for both solid and Liquid wastes. ESPA members provide an array of services within the liquid waste management value chain.
Development Partners	Provide Technical and Financial support sector and contribute to sector development including policy, strategy, and plans formulation, implementation monitoring, and evaluation.

Private (Contractors, Consultants)	Provide services to support Assemblies/communities to have access to and use sustainable sanitation and hygiene services. This includes capacity building, knowledge management, construction of facilities, supply of goods and services in general.
Beneficiary communities and Households	Are at the centre of WASH planning, management, implementation, and monitoring and evaluation.
Environmental Protection Agency (EPA)	Set policies and standards to regulate the larger environment including environmental degradation, pollution, and sanitation.
Civil Society Organizations e.g. CONIWAS[2], religious groups, and network of Journalists in WASH	Engages in advocacy and sector dialogues in planning, research, monitoring, and implementation of actions. Members are also engaged in service provision at the community level.

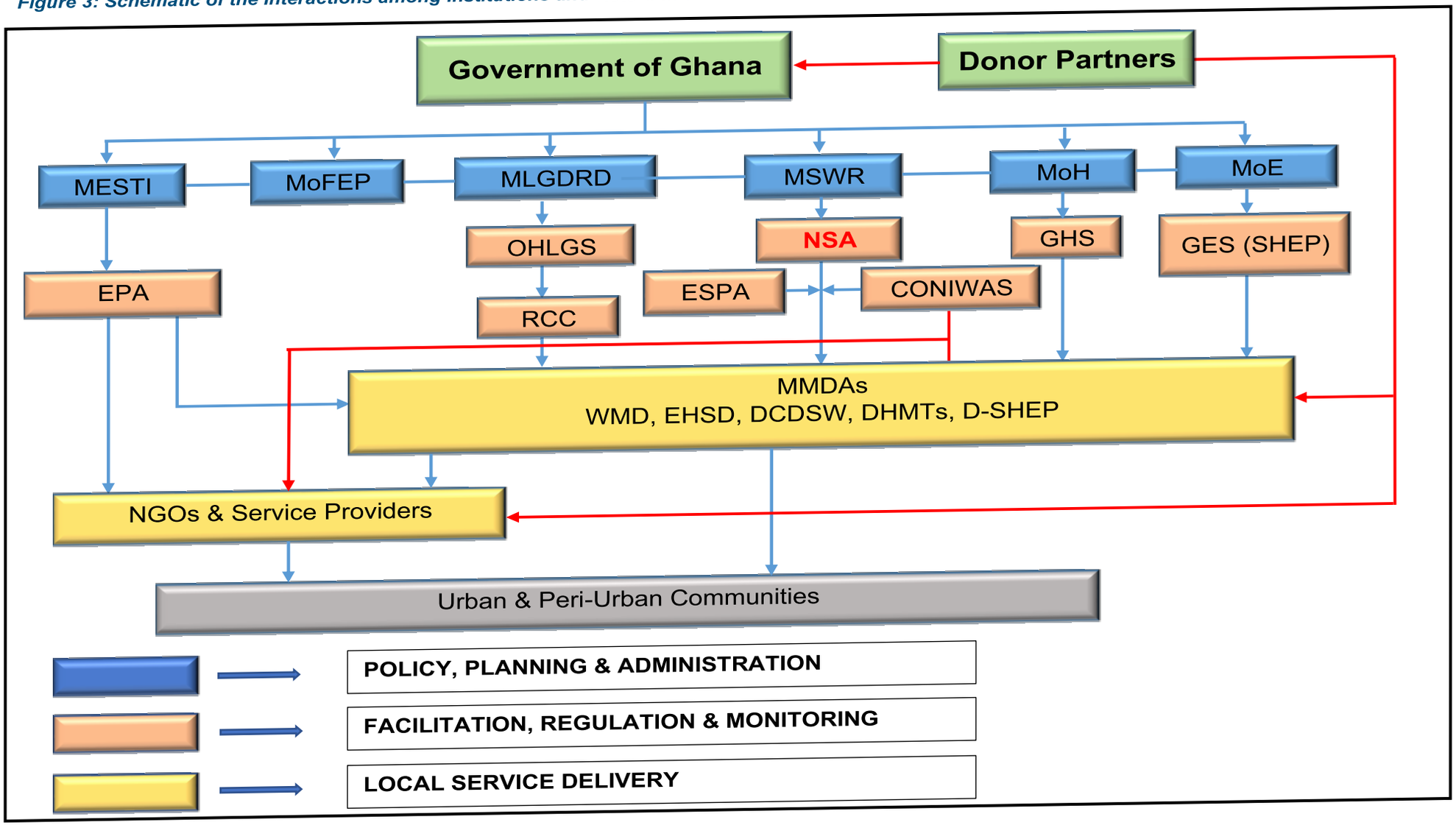
2.3.1 Review of the Existing Institutional Arrangement for Liquid Waste Management

Prior to the establishment of the Ministry of Sanitation and Water Resources (MSWR), the MMDAs received technical guidance and support on programming directly from the national level, through the Environmental and Sanitation Directorate (EHSD). The MMDAs reported to the EHSD at the then MLGRD. With the establishment of MSWR by the Executive Instrument (EI) 28 of 2017, MSWR replaced MLGRD, and EHSD which hitherto provided technical support and was the link between MLGRD and MMDAs on environmental sanitation and hygiene services was moved to MSWR. By this re-alignment, MLGRD still maintains its responsibility for MMDAs, and the functions and structure for delivery sanitation at MMDA remain the same. However, there is no technical directorate under MLGRD to support MMDAs in their quest to manage environmental sanitation and hygiene services.

The MSWR has two directorates namely: the Environmental Health and Sanitation Directorate (EHSD) and Water Directorate (WD). Whilst the water subsector has Community Water and Sanitation Agency (CWSA), the Water Resources Commission (WRC), and the Ghana Water Company Limited (GWCL) to deliver plans of the Ministry, there is no similar structure to provide direct linkage and technical backstopping to enable MMDAs to deliver environmental sanitation and hygiene services appropriately. This has made the delivery of sanitation policy, guidance, and relevant technical support from the ministry challenging. There is a clear disconnect, signifying a weak linkage between departments and agencies of MSWR and the MMDAs. This gap needs to be bridged, and at the very least, ensure unhindered information flow. The establishment of the National Sanitation Authority (NSA) is being pursued in earnest, to strengthen the institutional gap which exists upon the creation of the MSWR. Figure 3 presents the schematic of the organisation of institutions and various actors in the sector.

[2] CONIWAS is the Coalition of NGOs in Water and Sanitation

Figure 3: Schematic of the Interactions among Institutions and Actors in the Sector



2.3.2 Proposed Institutional Reviews for Liquid Waste Management

It is the mandate of MMDAs to deliver environmental sanitation services including urban sanitation services to the population under its jurisdiction. Whilst MSWR provides policy direction and leadership to the sector at the national level, the MLGDRD has administrative oversight responsibilities over the affairs of the MMDAs. The Office of the Head of the Local Government Services (OHLGS) is responsible for the human resources (staff), including those of the waste management and environmental health departments. Issues relating to staff transfers and promotion are part of the responsibilities of the OHLGS. Thus, whilst the MSWR may institute the appropriate policies and programmes to improve urban sanitation, it is not easy to technically actualise such plans and policies at the Assembly level. Whilst MSWR is working on establishing the National Sanitation Authority to fill the gap between itself and the district level actors on matters relating to environmental sanitation:

- The Ministry must provide the leadership in coordinating the sector at the national level by working with other Ministries, Departments and Agencies (MDAs) through the strengthening of the existing Water and Sanitation Sector Working Group (WSSWG), as a platform to bring key ministries around one table to discuss issues on water and sanitation. Currently, MLGDRD, MOH, MESTI, MOE, MOF are all members of the WSSWG.
- The NDPC must design a planning framework to enable MMDAs to capture programmes and plans of the MSWR, monitor the implementation, and receive reports through the Annual Progress Report by the MMDAs.
- OHLGS must also ensure that staff programmes and appraisal processes reflect on policies and programmes from the MSWR and must design appropriate staff development training programmes to build the capacity of staff. Again, statutory assessments conducted at the MMDA levels like the District Performance Assessment Tool (DPAT) can be used to assess how well government programmes and initiatives on environmental sanitation are being implemented at that level. Here the DPAT should focus on services indicators that will provide feedback on how safe sanitation service delivery is being implemented in each MMDA.

2.4 Financing of the Liquid Waste sub-sector

2.4.1 Review of Existing Sector Financing

The traditional sources of finance for the WASH Sector in general, and in particular, the liquid waste management are from the 3Ts - taxes, tariffs, and transfers (loans and grants) mostly from the Central government through yearly budgetary allocations.

Metropolitan, Municipal, and District Assemblies (MMDAs) finance WASH services through District Assembly Common Fund (DACF), Internally Generated Fund (IGF), and sometimes from District Development Fund (DDF) - a donor-supported pool fund allocated to MMDAs on a performance basis. Investments in infrastructure for liquid waste management for a limited number of cities and institutions have been provided by the Central government, and in some cases in partnerships with the private sector. However, resources for sustainable operation and maintenance of facilities are a challenge, especially a state/municipal-operated facilities. Thus, local authorities in Ghana operate in resource-constrained environments and are unable to deliver effective and efficient environmental sanitation services as they continue to struggle to implement the measures required to deal with the ever-growing problem of waste.

Major financing of liquid waste management, whether through the construction and maintenance of domestic waste treated by septic tanks or other on-site methods, comes from households' levels. Evacuation is mostly done by the private sector at a negotiated fee with the households. In areas where appropriate treatment and management facilities are not available, liquid waste collected is directly disposed into the ground (inclusive of pit latrines), the bush, or waterways, thereby making the liquid waste management chain incomplete. Also, innovative financing mechanisms through credit schemes are currently available, on a limited scale, to finance household toilet construction at subsided rates. This approach to financing sanitation is mainly done through grants from Development Partners.

2.4.2 Proposed Strategies for Financing of Liquid Waste Management Activities

- ***Financing Sanitation Infrastructure and Services at the MMDA Level:*** The responsibilities of MMDAs in terms of urban sanitation require a strong financing mechanism to allow budgeting and decision-making. The funds, either national or international, that are earmarked for urban sanitation must be transferred to MMDAs and utilised on the proposed activities or projects in the D/MESSAPs and the MTDPs. This is in accordance with the legal framework which entrusts the planning of urban sanitation infrastructure and services to MMDAs. This could follow the lines of District Development Fund (DDF) and Urban Development Grants (UDG) where these resources are transferred to the MMDAs to enable them to pay for agreed services and infrastructure.

  This would mean that MoF/MLGRD must decentralise the payment of contractors and other service providers working in the MMDAs, instead of the current system, where payments to contractors are made by direct deductions from the MMDAs' DACF. This will be effective with the operationalization of Ghana's Integrated Financial Management Information System (GIFMIS). To enhance this process, MMDAs would have to budget for sanitation activities in their action plans and ensure these are reflected in the GIFMIS.

- ***Financial institutions must be encouraged to invest in sanitation:*** Financial Institutions (including investment funds) must be encouraged to invest (at concessionary interest rates) in the provision of sanitation facilities. Private firms should be supported to secure investments and financing (with relatively low-interest rates and flexible payment terms). Existing sanitation financing models such as the "sanitation fund" being piloted in some MMDAs should be reviewed and scaled up. Thus, district or regional level sanitation funds will be crucial in providing the needed funding to increase sanitation uptake and provide access for all, leaving no one behind.

- ***The introduction of the Sanitation and Pollution Levy (SPL) and the establishment of the National Sanitation Fund (NSF):*** In 2021, the government introduced the Sanitation and Pollution Level to generate funds to support the management of waste and related challenges in Ghana. It is expected that this levy will provide the seed funds for the establishment of the National Sanitation Fund. The NSF will provide funding for sanitation and related projects and programmes. The NSF will have a special focus on investments in sanitation infrastructure and services that support safely managed sanitation across the entire value chain. The fund will also be used to support the development and promotion of sanitation and related business towards

Box 2: Operational modalities of GIFMIS

Financing for liquid waste management either from the Central government or from the IGFs of the Assemblies has to be operationalized through their MTDPs and Annual Work Plans and Composite budgets. Expenditures are approved through the Ghana Integrated Financial Management Information System (GIFMIS), a critical ingredient in the Public Financial Management Act 2016, Act 921.

MMDAs are required to off-load all their activities and budgets onto the GIFMIS before expenditures can be made. The system is such that expenditures on any services, activities and programmes cannot take place if it is not in the GIFMIS. The system provides a paperless transparent process for managing revenue and expenditures by state actors including MMDAs. Thus, all expenditures on projects and activities related to liquid waste management must be on the system before approval can be given.

In other words, if the activity is not planned and budgeted for and reflected in the GIFMIS framework, expenditures will not take place. Monitoring of the systems is done by the Ministry of Finance through the GIFMIS Secretariat. To be able to pay a private sector entity for liquid waste management services rendered, the Assembly should have budgeted for it in the GIFMIS. Same applies to the logistical requirements of the staff working in the MMDAs.

2.5 Planning, Monitoring, and Review

- NESSAPs and M/DESSAPs are tools that will enable the MMDAs to plan their sanitation activities and priorities. As earlier mentioned, all these documents, with the exception of a few MMDAs (which updated their plans with funding from external donors), need to be reviewed and updated.
- The MSWR has also been working on developing well-structured and coordinated monitoring and evaluation system for both rural and urban sanitation activities. Currently, the MSWR is working on the Sector Information System, the Golden Indicators, and ESICApps, and these need to be adopted by all stakeholders. The idea of the SIS is to have an umbrella monitoring and evaluation system that receives data from all the various data management systems being used by different actors in Ghana, both within the rural and urban space. Refer to Section 7 for proposals on monitoring, evaluation, and learning.

2.6 Capacity Development

2.6.1 Overview of Existing Capacity Development

Like all other sectors, the Environmental Sanitation sector suffers from a shortage of skilled technicians. This may continue for some time as few people (environmental sanitation engineers and specialists) graduate from universities to take up positions at the MMDA level due to poor conditions of service in the public sector. Moreover, due to limited financial ceilings, the government is unable to recruit the required number of staff to fill-up the available positions or vacancies. This creates a human resource gap, which is a contributing factor to the state of environmental sanitation governance at the MMDA levels. Innovation in terms of technologies and service delivery models are emerging in Ghana (e.g., Bio-fill systems, waste-to-energy plant, waste-to-fertilizer, decentralised sewer systems among others). This requires that Environmental sanitation staff at the MMDA level are not abreast with adequate knowledge or skill in the management of these innovations or technologies.

2.6.2 Proposed Strategies for Capacity Development

- Whilst the Assembly, as per the current institutional framework, does not receive official technical backstopping from the national level, it is imperative that MMDAs, develop incentives to attract skilled professionals in the long term. MMDAs should invest in retraining for existing staff through participation in short courses and practical attachments. This will ensure that environmental sanitation officers at the MMDA level are able to manage the emerging urban sanitation challenges with the available solutions and innovations.
- MMDAs in conjunction with the OHLGS and the relevant tertiary institutions must design programmes to help improve the technical capacity of their staff towards efficient management of liquid waste services.
- With respect to law enforcement and prosecutions, the critical challenge is the inability of MMDAs to enforce the available laws. Several reasons are attributed to this, including, the absence of trained prosecutors, inadequate bye-laws, poor motivation to prosecute, poor resource allocation to follow through prosecutions amongst others. MMDAs must remove all barriers impeding the enforcement of available laws and regulations and ensure that staff is adequately resourced and protected to fully enforce the laws. This will among other things include investment in human resources; training for EHOs, equipping EHAs; engaging traditional and political leaders to stop influencing prosecutions; and strengthening the links between their legal regimes, Attorney General's department and the Police.

3. DEMAND CREATION AND BEHAVIOUR CHANGE COMMUNICATION

3.1 Introduction

Over the last decade, sanitation has been receiving increasing attention from policymakers and donors through their sanitation interventions all in a bid to improve access to sanitation facilities and services in urban areas. The majority of these interventions employ Demand Generation (DG) and Behaviour Change Campaign (BCC) approaches. These approaches usually comprise efforts to drive awareness and interest in sanitation products and services, and also promote positive attitudes and behaviours. However, after years of implementation, very few of these interventions have yielded the desired results along the entire sanitation chain – for example, only 25% of the urban population have access to improved sanitation facilities, 11% of the urban population are practicing open defecation (GSS, 2018), and a substantial amount of fecal waste (ranging between18%-90% in major cities in Ghana) is disposed-off in the open environment.

The common demand generation and behavioural change challenges along the urban sanitation chain in Ghana revolve around the following:

- Factors such as convenience, dignity, privacy, health, and safety were identified as the most important motivators for toilet ownership. Demotivators such as existence and continuous investment in communal toilets, high cost of toilet options, poverty, lack of space, and lack of expertise to construct toilets were also identified.
- Unhygienic and illegal practices such as dumping faecal sludge in the open, channeling faecal matter into drains and run-offs and manual emptying creating public health issues. The major underlying causes identified were the cost of services, availability of dumping sites and low level of law enforcement.
- Demand for Faecal Sludge Treatment (FST) Products is low due to the challenges of perception – disgust at the thought of using products created out of faecal sludge and some safety concerns, poor packaging of products, and pricing competition from known brands.
- About one out of ten urban dwellers practice open defaecation, and close to half have limited or no handwashing facilities (implying poor handwashing practices). These coupled with poor handling of faecal waste by emptying operators and other sanitation workers increases the health risk.

The proposed approaches herein are informed by the results of a review of different Demand Generation and BCC strategies implemented under the major urban sanitation initiatives in the last 10 years. The review identified elements that are critical to the strategy – namely user-focused formative research to guide the process, the central role of EHSD and its staff, capacity and preparedness of suppliers, and law enforcement. Other key recommendations include the need for the strategy to focus on the entire sanitation chain; the need to draw on the strength and capabilities of civic players, community leaders, and the media; the need to adopt multiple channels of communication and targeted messaging to critical influencers; and finally, the need for proposed approaches to fit the existing funding capacities, staffing capabilities and sanitation governance structure at the MMDA level.

3.2 Rationale and Objectives

The objectives for this thematic area are to:

- make toilets accessible and affordable to households.
- end open defaecation in urban areas.
- make emptying and transportation services desirable, accessible, and affordable.
- end the unsafe and illegal disposal of faecal sludge.
- make faecal sludge products acceptable, accessible, and affordable.
- increase demand for faecal sludge products.

3.3 Critical Elements and Requirements

The proposed strategy or any variations that might be introduced or implemented by stakeholders must meet the following criteria:

- Demand Generation and Behavioural Change Communication Campaigns Strategies must be people-centered and informed by evidence (including information about the interests, motivations, norms, and values of the targeted persons, group of persons, or communities).
- Awareness creation on and enforcement of sanitation bye-laws must be a major component of the strategy.
- Demand Generation and Behavioural Change Communication campaigns must be supported by a strong service delivery structure. Products and Services being promoted must be available and affordable to targeted up-takers.
- Demand Generation and Behavioural Change Communication campaign activities must be supported or led by the Environmental Health and Sanitation Units. The capacity of Staff of EHSUs (at both district and subdistrict levels) must be enhanced for effective monitoring and management of the process.

3.4 Delivery Approaches for Demand Generation and BCC

A liquid waste management strategy for urban areas in Ghana must respond to the complexities of the social and economic structure of its inhabitants. The Strategy will therefore guide Demand Generation and BCC activities under the capture and containment, emptying and transportation, and treatment and reuse components of the urban sanitation chain.

3.4.1 Demand generation and BCC Blueprint for Capture and Containment

The approach for achieving Demand Generation and BCC objectives under capture and containment should be led by civic structures, with the active involvement of beneficiary communities.

- **The first step for generating demand for sanitation services and products, as well as behaviour change initiatives should be extensive community sensitization activities or campaigns.** This sensitization drive must cover the dangers of poor faecal disposal, and the responsibilities of the citizenry to ensure a clean and healthy environment. Key Activities to be considered should include:

- Conduct local formative research to understand the peculiar urban sanitation challenges, community governance and mobilisation structures, social and economic structures, and communication channels within targeted areas.
- Capacity-building activities for both public and private actors (including community volunteers, influencers, and media). This should include training and utilization of participatory planning approaches and techniques in sensitization and decision-making engagements.
- Activation of communities by both "triggering" and sensitizing activities. This stage should involve sectional or community engagement and sensitisation activities, institutional engagements, and the use of mass media to inform and reinforce behaviour change.

Following the extensive community sensitisation phase, the EHSU must engage in an active implementation phase using the ESICOME. This stage should be characterized by the conduct of targeted premises inspections, Organise Joint Review Meetings of Key Stakeholders to track progress, and Declaration of Moratorium. To sustain the gains made, and to ensure sanitary conditions within the targeted communities, Environmental Health and Sanitation Units should:

- Continue with education and enforcement of sanitation bye-laws (including prosecution of offenders).
- Intensify its monitoring and inspection activities
- Support communities or suburbs to conduct community self-assessment
- Conduct ODF Verification and Celebration and
- Organise Quarterly "Cleanest Electoral Area" Competition and publish results in the form of a league table.

3.4.2 Demand Generation and BCC Blueprint for Emptying and Transportation

The proposed Demand Generation and BCC model for faecal sludge emptying and transportation services are designed to achieve two major objectives; to make emptying and transportation services desirable and accessible: and to end unsafe and illegal faecal sludge disposal practices.

- **The strategic approach for this should include initial preparatory and capacity-building activities for both MMA Staff and Service Providers.** These activities should be aimed at creating awareness about emerging innovative new service models, preparing service providers highlighting professionalism in service delivery, and obtaining information relevant for effective and efficient management of emptying and transportation services.

- **Embark on Sensitisation and Promotional Activities.** MMAs should engage the general citizenry using new and traditional media forms to create awareness on the use of technology to enhance emptying and transportation services. Support key stakeholders (like the Association of Cesspool truck operators and Environmental Service Providers Association) to promote the services of truck operators and other emptying services and safe and hygienic disposal practices.

- **Conduct Routine Monitoring and Law Enforcement**: MMAs and key stakeholders should implement the following activities to ensure continuous demand for improving services and change behaviours:
  - Periodic inspection of houses, institutions, public and open spaces (including all undeveloped and vacant lots) to ensure the maintenance of hygienic environment and amenities, and adherence to emptying guidelines.
  - Continuous monitoring (and tracking) of truck operators to ensure compliance with service standards.
  - The organisation of refresher training and capacity-building workshops for emptying service providers.
  - Inclusion of issues related to emptying services in periodic sensitisation activities in communities and institutions.
  - Enforcement of environmental sanitation bye-laws related to faecal sludge emptying and transportation practices, and the prosecution offenders.

  Although these activities would generate considerable demand for faecal sludge emptying and transportation services as well as support behaviour change, the following medium to long term interventions must be implemented to sustain the gains:

  - Investment in the construction of additional Disposal and Treatment Sites.
  - Support the acquisition of mechanical emptying trucks, well-suited for densely populated low-income communities in urban areas.

3.4.3 Demand Generation and BCC Blueprint for Faecal Sludge Treatment Products

Demand Generation and Behavioural Change Communication activities for the treatment and reuse component of the chain are focused on the promotion of Faecal Sludge Derived (FSD) products. The main objectives of these proposed activities are: To make faecal sludge products acceptable and accessible, and to increase demand for faecal sludge products.

The proposed strategy for promoting and generating demand for FSD products focuses on mainstreaming the products, highlighting their safety, technical, and cost-effectiveness. The following key activities should be implemented:

- **Create a database and catalogue of FSD products in the market.** This database should emanate from a comprehensive review FSD product market. The review should cover the following areas: Available FST products, their uses, and their substitutes; technical performance of treatment products; and Market development initiatives or strategies - successes and challenges.

- **Build the capacity of key stakeholders** on FSD product standards and benchmarks.

- **Organise promotional activities including the** rebranding of products, supporting direct sales activities, showcasing products at trade fairs and meetings of FBOs; negotiating and signing of supplier agreements with state and nonstate bulk clients; and organizing public awareness campaigns on the circular economy and FSM.

- **Monitor and Enforce Existing Regulations on FSD Products:** This should be done by:
  - Collaborating with relevant MDAs (like EPA, GSA) and key stakeholders to enforce regulations or bye-laws related to faecal sludge treatment.
  - Monitoring companies involved in the production of FSD products to ensure strict compliance with product standards.
  - Reviewing the performance of products on the market, and adjusting market strategies
  - Enforcement of all laws, bye-laws, and regulations related to faecal sludge management in urban areas.

In addition to the proposed activities, central government and MMDAs must invest in FSM treatment plants and also create an enabling environment for firms to thrive and meet market demands.

4. TECHNOLOGY OPTIONS FOR LIQUID WASTE MANAGEMENT

4.1 Introduction

Fundamental to ensuring safely managed sanitation is the adoption of a range of appropriate sanitation technology options that gives full cognisance of the urban context. Typical urban areas in Ghana require a broad and holistic approach to technology selection to fit the different complex settings. Invariably, all aspects of developing a holistic approach to technology options are crucial. All aspects of technologies in urban areas are inter-connected, hence any intervention would have to be comprehensive and well-coordinated. Technologies selected for urban areas must therefore be socially and institutionally acceptable, financially affordable, feasible, and sustainable. As part of the development of this strategy document, an assessment of technology options available in Ghana across the sanitation value chain revealed that most sanitation interventions implemented in Ghana focus on containment technologies to the neglect of the needed technologies for the other parts of the sanitation value chain.

4.2 Rationale and Objectives

The objectives of this thematic are include:

- Addressing the whole sanitation chain in terms of technologies, through a sanitation system.
- Providing guidelines for sanitation system selection.
- Promoting innovative low-cost technical options capable of coping with key challenges of household sanitation in urban areas in Ghana.
- Ensuring good quality service standards and sanitation service delivery.

4.3 Critical Elements and Requirements

- **Develop a Sanitation Zoning System:** Prior to the deployment of sanitation technologies, MMDAs must develop a sanitation zoning system (or better still a sanitation master plan) based on the city's physical plan. Key considerations for the sanitation zoning system are the economic profiles of residents and the technical constraints of the area (e.g., level of the water table, nature of soil, population, and dwelling density, etc). This plan must be available to all stakeholders planning to deploy sanitation technologies within the jurisdiction of the MMDA. These plans should be utilised by Environmental Health Officers, Planning Officers, and Building Inspectors to enforce sanitation bye-laws, zoning laws, and building codes respectively.
- **Select technologies/ technical options that are compatible with the larger sanitation system:** Technologies must be selected based on their compatibility with the already existing upstream and downstream technologies and practices. It means that technical options should be assessed and deployed based on issues such as household practices, availability of water, type of desludging services, technologies, and challenges with final disposal and treatment.

- **Select and deploy technologies or technical options that are simple, affordable, and can easily be maintained:** stakeholders must be guided to choose technologies that can easily be deployed, repaired, and maintained. Individuals and Institutions should be able to cover the CAPex and OPex of the selected technologies.
- **Select and deploy inclusive technologies or technical options:** Technologies being deployed (especially in households and public places) should have User Interfaces that meet the special needs of women, children, the disabled, and the elderly.

4.4 Delivery Approaches for Technology Options

4.4.1 The Existing Sanitation Systems and Technical Options

Figure 4 below presents the existing sanitation chain for liquid waste management in most urban areas. It depicts the complexities of safe faecal sludge management at each stage of the value chain. This shows that limited efforts have been put into faecal sludge management over the years and this can be seen in the challenges relating to treatment and disposal aspects of the sanitation value chain.

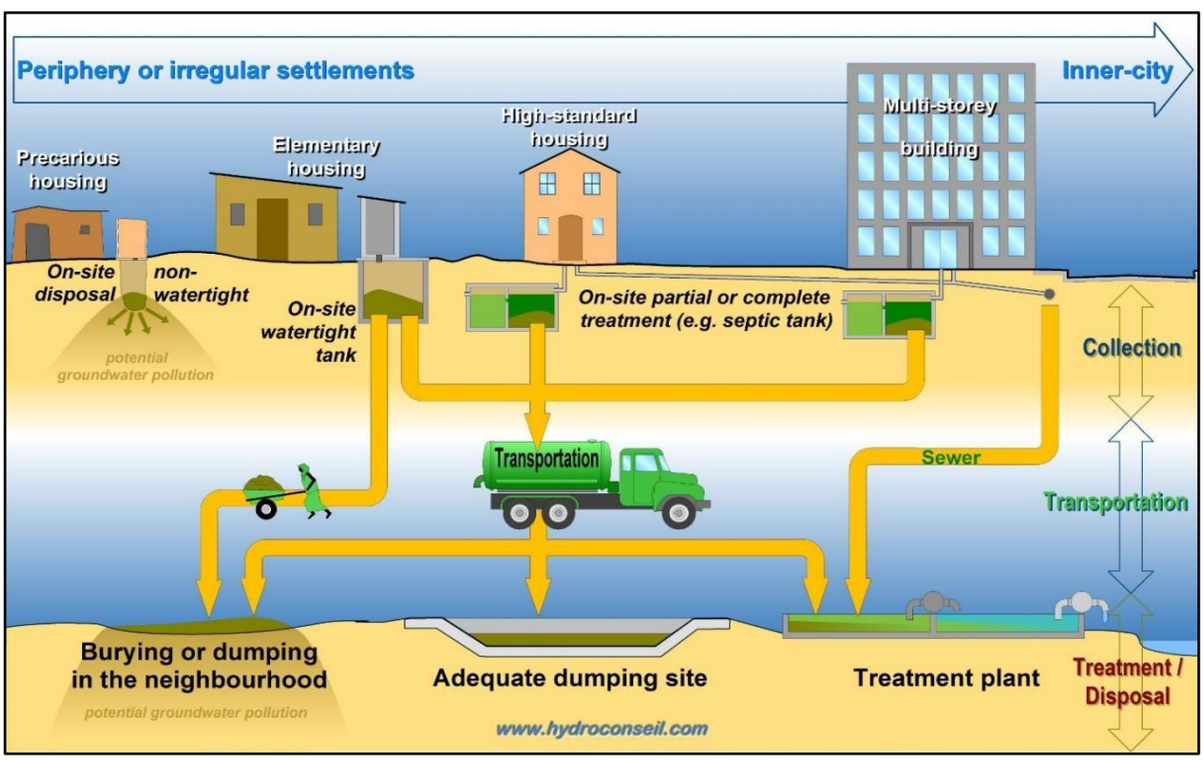


Figure 4: Existing Sanitation Value Chain

Table 5 provides a categorisation and clarification on the different sanitation systems that are being deployed in most urban areas in Ghana. It defines the different types of sanitation systems that are being deployed across the entire value chain. The categorisation of the sanitation systems mimics the sanitation ladder based on non-shared and shared facilities and the different technologies being used currently in most urban households.

Table 5: Existing Sanitation Systems

Sanitation System	User Interface	Capture & Containment	Transport	Treatment & Reuse
1. Non-shared with no or limited pre-treatment	No restriction	Blackwater	Semi mechanical/ mechanical	Sludge treatment plant - Reuse
2. Non-shared with septic tanks	No restriction	Blackwater and greywater	Mechanical	Sludge treatment plant - Reuse
3. Non-shared with on-site treatment (alternating-pit, compost, Biofil[3])	Flush/No Flush + urine diversion/ not	Blackwater or urine + excreta unmixed	On-site treatment + reuse	
4. Non-shared with a sewerage system	Flush	Blackwater and greywater	Sewer	Wastewater Treatment Plant
5. Non-shared mobile toilets with UDT system	No flush + urine diversion	urine + excreta unmixed	Semi-mechanical	Treatment Plant
6. Shared toilets	No restriction	Blackwater and some greywater	Mechanical	Sludge treatment plan - Reuse

4.4.2 Outlook of Proposed Technical Options

This section presents the various technical options that best fit the different sanitation systems being deployed currently. Based on these different systems, table 6, table 7, table 8, and table 9 are aimed to provide information about the different technical options every sanitation system can rely on for each of the sanitation value chains. The shading of the tables has been done to reflect the characteristics that best qualifies each of the sanitation systems. The tables presented here will require an update as and when new technologies and products are developed introduced into the urban space.

Table 6: Type of (Toilet) User Interfaces

Model	Dry toilets slab or seats	Pour Flush toilets	Cistern Flush toilets (incl. low flush)	Urine diverting slabs/seats
Dependence on water ➔	*Less water dependent*	*Water required*	*Large volumes or water required*	*Less water dependent*
1. Non-shared with no or limited pre-treatment				
2. Non-shared with septic tanks				
3. Non-shared with on-site treatment (alternating-pit, compost, Biofil)				
4. Non-shared with sewerage system				
5. Non-shared mobile toilets with UDT system				
6. Shared toilets				

[3] Under specific design, Biofil technologies can be considered an on-site treatment option according to standards from the MSWR. Without any adequate filtration in place in the process, Biofill systems are unlikely to be considered as on-site treatment option.

Table 7: Type of Capture and Containment

Model	VIP/ KVIP/ Off-pit	Aqua-Privy	Septic Tank	Bio-Composting Toilets	Biofil*	Mobile toilets
1. Non-shared with no or limited pre-treatment						
2. Non-shared with septic tanks						
3. Non-shared with on-site treatment (alternating-pit, compost, Biofil)						
4. Non-shared with sewerage system						
5. Non-shared mobile toilets with UDT system						
6. Shared toilets						

Table 8: Emptying and Transportation Technologies

Model	Semi-Mechanical Emptying Services	Mechanical Emptying services	Sewer systems	No transport required before treatment
1. Non-shared with no or limited pre-treatment				
2. Non-shared with septic tanks				
3. Non-shared with on-site treatment (alternating-pit, compost, Biofil)				
4. Non-shared with sewerage system				
5. Non-shared mobile toilets with UDT system				
6. Shared toilets				

Table 9: Treatment Technologies

Model	Waste to energy (biogas reactor)	Composting	Trickling filter	Activated sludge	Waste stabilization ponds	Drying beds (planted or not)	No treatment plant (centralized or decentralized)
1.Non-shared with no or limited pre-treatment							
2.Non-shared with septic tanks							
3.Non-shared with on-site treatment (alternating-pit, compost, Biofil)							
4.Non-shared with sewerage system							
5.Non-shared mobile toilets with UDT system							
6.Shared toilets							

Waste to Energy and co-composting options require more attention when implementing them in sanitation systems 1 and 2. Additional co-substrate is mandatory and large quantities may be required

4.4.3 SWOT Analysis of Existing Technologies

The SWOT analysis of the existing technologies along the urban sanitation chain has been detailed out in table 10, table 11, and table 12. A detailed description of these technologies is well presented in the Sanitation Technical Options [4]manual These are culled from manuals prepared and used as technical references.

a. Capture and Containment

Table 10: SWOT Analysis of Capture and Containment Technologies

Options	Strength	Weakness	Scalability
VIP/ KVIP/ Offset pit	• Materials are available in Ghana • Well known and tested system • Alternating pits have a long life span (indefinite if maintained properly) • Excavation of humus is easier than faecal sludge • Significant reduction in pathogens through onsite system • Potential for use of stored faecal material as a soil conditioner • Flies and odours are significantly reduced (compared to non-ventilated pits) • Can be built and repaired with locally available materials • No water required	• Requires space for relocation when full. • When not off-pit, there is a greater risk of odours. • No greywater. • Manual removal of humus is required • Higher possibility of groundwater contamination • The short life span for single pit options • Higher capital costs than Single VIP; but reduced operating costs if self-emptied • Seen as outmoded in most urban settings	++
Aqua-Privy	• Materials are available in Ghana.	• Gas is not always properly evacuated. • No greywater • Unpopular system	+
Septic Tank	• Materials are available in Ghana for concrete septic tanks. • Greywater can also be diverted into the tank Simple and robust technology • Low operating costs • Long service life Small land area required (can be built underground)	• High initial cost. • The fermentation process can produce some odours. • Low reduction in pathogens, solids, and organics • Regular desludging must be ensured • Effluent and sludge require further treatment and/or appropriate discharge • Septic tanks vrs. simplified sewer systems to be studied.	++
Biofil	• Materials are available in Ghana for concrete septic tanks. • It does not require much space. • Is workable in waterless areas; It is new	• Do not treat the effluent. • It gives users the impression that no O&M activities are required. • High risk of pollution if no polishing treatment or proper filtration is performed.	++

[4] Technical Manual for latrines construction, UNICEF, Technical Manual for Biofil system, GAMA project

Bio-Composting Toilets	• Materials are available in Ghana for concrete bio-composting toilets; No need for further emptying services. • Because double vaults are used alternately, their life is virtually unlimited. Significant reduction in pathogens • Potential for use of dried faeces as soil conditioner No real problems with flies or odours if used and maintained correctly (i.e., kept dry) • Can be built and repaired with locally available materials • Suitable for rocky and/or flood-prone areas or where the groundwater table is high • Low (but variable) capital costs depending on materials; no or low operating costs if self-emptied • No water required • Homemade compost can be more attractive than treatment plants	• Requires space and money for initial investment. • Pointless without adequate care of the system. • Requires training and acceptance to be used correctly Requires a constant source of cover material • Manual removal of dried faeces is required • Little marketing approaches	++
Low-Cost Technologies like a pit in a plastic **d**rum surrounded by sand	• Materials are available in Ghana and plastics are produced elsewhere • Very low-cost • It is new	• Large-scale dispersion of plastic in soils. • Regular emptying services requested. • No adequate emptying services are created, jeopardizing the sustainability of the system	+++

b. Emptying and Transportation

Table 11: SWOT analysis of emptying and transportation technologies

Options	Strength	Weakness	Scalability
Semi-Mechanical	• Adequate to sanitation system with low capacity. • Less expensive than mechanical emptying • Access to sanitation systems with limited space can be possible • Low capital cost investment	• Transfer station required • Long-distance to the treatment plant cannot be achieved • Without adequate equipment, sludge	+
Mechanical	• Long-distance to treatment plant can be performed • Contact with sludge is limited • Higher capacity of pumping system to desludge the tanks. • Very well developed in Urban areas • Medium capital cost investment	• Expensive option • Access to infrastructures can be difficult • Larger roads and access are required	++

Sewer systems	• Containment and collection with a single option • Several types of decentralised systems can be implemented at a lower cost • Less space is required • The risk of desludging in unauthorized areas is low better control of the operation	• High Capital cost investment • Water supply required • Strong managerial and technical capacities required • Hard to enforce any payment without a water bill	++

c. Treatment

Table 12: SWOT Analysis for Treatment Technologies

Options	Strength	Weakness	Scalability
Compost process	• Marketable products from the plant	• Requires co-substrate from low to high quantity	++
Bio-digester	• Marketable products from the plant	• Requires co-substrate from low to high quantity	++
Waste Stabilization ponds	• Low energy consumption • Low O&M cost	• High capital cost • Space required	+++
Trickling filter	• Compact filter	• High capital and O&M cost • High energy consumption • High technical skills required • Risk of clogging is very high	+
Activated sludge	• Compact treatment option • Phosphorus removal	• High capital and O&M cost • High energy consumption • High technical skills required	++
Reed bed filters	• Very good treatment performance • Low energy consumption • Low technical skills required • Low O&M cost	• Med-capital cost • Space required • Phosphorus required additional treatment	+++

5. SUPPLY CHAIN AND SERVICES DELIVERY

5.1 Introduction

In the last decade, the view of the sanitation sector as a potential market that hosts enormous opportunities for business development is shared by various experts globally[5]. There is already a compelling case for sanitation as a business, with several studies pointing to evidence of the profitability of sanitation business – with an estimated economic return of about 10 USD for every 1 USD invested (Hutton et al, 2007). Against this background a diagnostic study commissioned to investigate the urban sanitation supply chain, services in Ghana revealed the following:

- The supply chain consists of individuals, organizations, technology, resources, and activities that are required to create the sanitation hardware components or services and transfer the hardware from the manufacturer to the end-use customer.
- The level of linkages and coordination among participants in the supply chain is weak. There is inadequate understanding and appreciation of the needs and preferences of consumers. Supply chain actors are unable to identify the requirements and specifications of different customers, thus affecting market segmentation and targeting.

5.2 Rationale and Objectives

This strategy emphasises the need for an effective and efficient mix of sanitation products and services within the urban landscape of Ghana across the sanitation supply chain.

Box 3: Specific Objectives for supply chain and service delivery

Supply Chain and Services Delivery:

- To facilitate the development of sanitation services that are fit for the different socioeconomic segments of the urban population.
- To ensure the sanitation supply chain (from capture/containment to treatment/reuse) offers solutions that are sustainable, appropriate, and affordable.

5.3 Critical Elements and Requirements

- ***Sanitation as interconnected to other basic services:*** This strategy recognises that the maximum benefits from access to safe sanitation can only be realised when access to sanitation is pursued together with access to safe water supply and good hygiene behaviours (WHO, 2018). The MSWR will develop guidelines for municipalities to undertake Service Delivery Assessments, which will be foundational to the preparation of Municipal/ District Environmental Sanitation Strategy and Action Plans (M/DESSAPs). These plans should indicate the convergence for improved sanitation and safe water supply at all spatial levels.

[5] SuSanA Factsheet (April 2012), Sanitation as a Business - Working Group 9a

- ***Sanitation services upgrade and technological transitions:*** Sanitation services must be carefully planned and targeted to different parts of our cities through a range of appropriate technical solutions. This will require a set of technological improvements for different parts of the sanitation supply chain. The MSWR will be required to develop an Urban Sanitation Services Standards (USSS) for municipalities to provide a common guide for sanitation services delivery in the urban areas. These standards may include but not limited to accepted toilet technologies for specific areas, guidelines for zoning and approved service levels, guidelines for emptying, transport, treatment, and disposal, and including all key actors in the supply chain.

- ***Spatial planning to provide support for ensuring safe liquid waste management:*** Poor spatial organisation has been one of the major barriers to urban sanitation services delivery in Ghana. However, rapid urbanisation and its associated challenges including poor sanitation can only be managed through proper urban planning. This strategy recognises the need to ensure that land-use planning and spatial development provide necessary consideration for liquid waste management at all spatial levels (i.e., households, neighborhoods, towns, cities, and at the national level). MMDAs must include guidelines for spatial development and zoning in the M/DESSAPs to guide sanitation infrastructure and services delivery. Specifically, approval of type of treatment facilities and location of these facilities should be included.

- ***Special sanitation services delivery:*** This strategy subscribes to the global aspirations of "***leaving no one behind***" and as such it recognises the need to ensure that sanitation services meet the needs of all people at all times. Providing sanitation services in emergencies, during disease outbreaks, and epidemics is considered a critical element under this component. A more detailed discussion on this is captured under Component 7 of this strategy.

5.4 Delivery Approaches for Supply Chain and Services Delivery

This strategy aims to progress the sanitation service levels of all urban households in Ghana to "safely managed sanitation". The strategy proposes a set of recommended service level improvements for different parts of the sanitation supply chain towards the achievement of safely managed sanitation service delivery in Ghana. The service delivery component of this strategy recognises that to achieve safely managed service levels in urban areas in Ghana, all households, and communities as well as institutions like Schools and Health Care Facilities, would have to upgrade to service levels that ensures the following:

i. Wastewater treated off-site
ii. Excreta emptied and treated off-site
iii. Excreta treated and disposed of in-situ

Each of these three broad options offers various technological options for achieving safely managed sanitation service delivery. Component 2 of this strategy provides a more detailed description of these options. The strategy encourages further research, development, and implementation as part of ongoing support for both initial development and ongoing adaptation of improvements in the sanitation service delivery.

- **Proposed service delivery models**

The strategy proposes that services delivery models described under this section be adopted by all MMDAs as a framework for categorising all services being provided by public and private entities along the supply chain. Each of these models has features of institutional controls, marketing, operations, and financing arrangements that are characteristic of services and businesses that operate under these models. It is worthy to note that each model has its merits and demerits and thus, MMDAs have to be able to determine which models best fit their context and their implications on the entire sanitation market. This provides relevant insight for market segmentation within Districts towards the achievement of "***leaving no one behind***".

- ***Demand or market-driven model:*** Based on the comparative analysis report, this model is the most preferred and effective for providing services in most urban areas in Ghana. Here, service delivery is based on the ***'principle of client pays'*** and requires generating demand for services or products amongst the target clients. With this model, services are more likely to respond to the real needs of individual households and enterprises and remain sustainable in the long term.
- ***Supply-driven model:*** Under this model, service delivery is typically driven by the intent to provide the service with a public good perspective, for instance in pro-poor projects or during emergencies (i.e., epidemic or disaster situations). It is largely dependent on central government or donor funding and mostly, characterised by subsidised service provision which may tend to be expensive and unsustainable in the long term. Thus, the provision of support during emergencies and to the vulnerable and poor should be done appropriately with a huge focus on sensitisation and a clear component of behaviour change communication.
- ***Needs-driven model:*** This is a system where market-driven and supply-driven models co-exist, whilst promoting accountability and sustainability. Often this is applicable where markets are weak and fail to delivery effective services to the poor and vulnerable. Government and donor funding resources are used to ensure services to those who cannot pay (low-income urban communities/ households), without crowding out the market for paid services provided by commercial actors. This model is often riddled with ineffective targeting of the poor and vulnerable which ends up becoming counterproductive. It is therefore important to follow the available guidelines for targeting the poor and vulnerable strictly to avoid creating more challenges when supporting the needy.
- ***Franchise Model:*** With this service delivery model a business with proprietary knowledge or expertise in providing specific sanitation services, will allow other businesses (usually smaller) to provide the same services under its name. In this case, the franchisor provides training, technical backstopping, quality control, marketing, and possibly, certain specialised equipment to franchisees.

In all cases, the partnerships should include people with environmental health knowledge to oversee risk assessment, system improvements, and operational monitoring as well as supporting programmes such as training to ensure that the systems developed deliver safe sanitation. This model will be especially useful in encouraging services in the aspects of the sanitation supply chain that are underexplored – for instance, treatment and reuse.

Table 13: Delivery Blueprints for Supply Chain and Services Delivery

Key Approaches	National Level	MMDA Level
Sanitation Sector regulation & standardization	• Review existing policy guidelines, and establish annual targets for ending Open Defaecation in Ghana • Develop policy guidelines, service levels, and service standards based on the review outcomes that would regulate both public and private sanitation businesses/service providers • Ensure land-use planning (zoning) and spatial development provides necessary consideration for liquid waste management	• License/certify sanitation hardware manufactures and producers and wholesale dealers and latrine artisans. • Undertake regular inspection to ensure prescribed sanitation standards are followed and systems of quality control adhered to by service providers. • Review and approve all sanitation projects by Development Partners, NGOs, CBOs, private companies before they are implemented. This can be done effectively through the establishment and or strengthening of M/DICCS by all MMDAs
Sanitation Supply Chain Strengthening and Collaboration	• Create opportunities for greater collaboration using expos, fairs, and national dialogues. • Facilitate the creation of regional-level Databases of key service providers. • Facilitate the use of technology to create a seamless link between service providers at various levels of the chain and the customer • Provide technical support services to sanitation businesses and service providers • Link sanitation service providers to technical/ vocational training schools, research institutions for knowledge sharing	• Provide technical support services to sanitation businesses and service providers • Link sanitation service providers to technical/ vocational training schools, research institutions for knowledge sharing
Capacity building through cascading training model	• Conduct sectoral training needs assessment of the various actors in the sanitation supply chain • Develop training of trainers' modules/materials for sector actors/ players based on the training needs assessment • Provide periodic training in specific technical and sanitation business management skills to a cadre of regional level trainers	• Provide training in specific technical and sanitation business management skills to sanitation entrepreneurs and sub-district sanitation officials • Provide technical support services to sanitation businesses and service providers • Link sanitation service providers to technical/ vocational training schools, research institutions for knowledge sharing

6. BUSINESS DEVELOPMENT AND FINANCING

6.1 Introduction

Effective sanitation thrives on a balanced provision of demand creation innovations, supply chain interventions, and other supporting services (*including technology options, financing, governance, and monitoring & evaluation*). However, the orientation of sanitation initiatives in Ghana has witnessed unequal attention on the demand creation side to the neglect of the supply side and other support services. The implication here is that even when the demand for sanitation is created, the targeted population finds it difficult to identify where and how to access the sanitation hardware and services. This situation, coupled with a complex or non-existence of affordable sanitation financing options for, especially low-income households to acquire decent toilet facilities, has resulted in low sanitation coverage in the country.

Again, a diagnostic study conducted to investigate the urban sanitation financing and business development in Ghana revealed the following:

- The sanitation sector has over the years been passively handled as an accompaniment of the general construction industry. There is a lack of attention towards the different interventions in sanitation improvement as a business model. Thus, responses to sanitation improvements have not been handled as a business process issue, but rather approached as a 'product or technology' issue.
- Most traditional approaches to sector improvements have been based on subsidy-driven infrastructure-focused programmes. As a result, businesses operating within the sanitation value chain are largely concentrated at the levels of capture and containment.
- It is estimated that about 90 percent of the financing in the sector is donor-driven. Beyond this, it was also observed that different mix of financing arrangements including *self-financing, subsidy, microfinancing, municipal financing, loans, and public-private partnerships* are used in financing interventions in the sector.

6.2 Rationale and Objectives

To address the historical shortfalls of public budgetary support to the sector, financing of urban sanitation investments must be hinged on an appropriate mix of financing options to mobilise sufficient resources to meet the sanitation challenges in urban areas.

Box 4: Specific Objectives for supply chain and service delivery

Business Development:

- To promote sanitation as a desirable commodity, generate demand and willingness to invest in sanitation facilities and services in Ghana.
- To increase the availability of sanitation products and materials that are appropriate and affordable.

Financing:

- To facilitate access to a mix of appropriate financing mechanisms for sanitation infrastructure and services in urban Ghana at all levels i.e., households, neighbourhoods, and MMDA levels.
- To facilitate the creation of a national to MMDA level sanitation fund to provide funds for infrastructure required to ensure all households have access to safe sanitation by 2030.

6.3 Critical Elements and Requirements

6.3.1 Business Development

- ***The nature of sanitation enterprises:*** In Ghana, businesses within the sanitation supply chain are largely concentrated at the levels of capture and containment. The strategy recognises the need for sanitation enterprises that will provide appropriate services across the sanitation supply chain that will be responsive to the requirements of the "safely managed service level" envisaged by this strategy, through a private sector (business)-led sanitation services delivery approach.

- ***Sanitation business development support services:*** The strategy recognises the need to facilitate the development of a range of business support services to support sanitation enterprises across the supply chain. MMDAs are proposed as key actors in creating the business support services required for sanitation businesses to thrive. MMDAs have all the institutional and legal frameworks required to facilitate these support services. The key elements of these support services will include: *"demand creation, creation of sanitation markets, training and capacity building, product development (customisation), business advisory support and mentoring, promoting networks and partnerships, access to finance/credit through municipal financing models, quality assurance, and advocacy and government lobbying support and enforcement management"*.

- ***Capacity building through cascading training model***: The strategy recognises the skills gaps in the sanitation sector in both public and private sectors. This requires the development of partnerships with academia, industry, NGOs, Social Enterprises, and other aligned bodies to provide support for capacity building. This shall be addressed through a cascading training model involving a cadre of sanitation specialists at the national level delivering sanitation lessons to local levels through a set of regional level training. To reach this objective, the MSWR and MLGDRD, through an extensive consultative process with sector stakeholders, shall develop:

  - Needs Assessment of urban sanitation enterprises in Ghana, drawing on the available data on the various aspects of sanitation business support services supported IPs and NGOs.
  - Identification and assessment of potential commercial actors, and align them to appropriate government agencies to provide business development support to these sanitation enterprises in Municipal areas (e.g., EHSU, Department of Community Development, BAC/ NBSSI, Works Department, etc.)
  - Technical guidelines to provide the broad framework for professionals engaged in training of supply chain actors in the sector and guidelines for providing BDS.
  - Promotional guidelines to educate sanitation chain actors and customers of the merits and demerits of the various sanitation technology solutions.

Box 5: Principle for Sanitation Business Development

Principle 1: Create a market for business rather than a dependency on government or development partners to fund sanitation service delivery.
Principle 2: Use donor funding to leverage government or other investment for business development.
Principle 3: Encourage the principle of 'client pays' such that customers contribute to the costs of service delivery.
Principle 4: Avoid crowding out the market for paid services provided by commercial actors and also consider opportunities for government actors to act as service providers.
Principle 5: Ensure accountability systems are in place to ensure services meet needs.
Principle 6: Ensure services are accessible to people who genuinely cannot afford to pay for them.
Principle 7: Promote and support sanitation enterprises to be socially inclusive.

6.3.2 Financing

- **Private sector-led sanitation financing -** While this strategy recognises the important role of government and multi-donor funding for sanitation delivery, it emphasizes a strategic shift from public and donor-centric funding to market-driven financing mechanisms at each of the stages of the sanitation service chain. The efforts of the Government and Development Partners should focus on supporting private sector sanitation investments to attain financial viability.

- **Planning for the lifecycle costs of sanitation investments –** This strategy recognises that sustainable sanitation services require provisions for initial investments (e.g. facility design, site preparation) in addition to adequate provisions for operations and maintenance of facility including but not limited to regular minor maintenance (minor repairs, replacement of worn-out parts, desludging) and major rehabilitation (complete renovation of aging components of the sanitation infrastructure, upgrading of the facility).

6.4 Delivery Approaches for Business Development and Financing

6.4.1 Business Development

This section provides strategies for improving sanitation business development in Ghana and how MMDAs can provide business support services to private sector to enable them to deliver their services efficiently.

Table 14: Delivery Blueprints for Business Development

Key Approaches	Delivery Blueprints		
	Capture and Containment	Emptying and Transport	Treatment and Reuse
Access to Market	**National Level** • MSWR should strengthen the national campaign on improving sanitation, through awareness creation and education on the need to own a toilet. • MSWR should leverage Private sector interest and the government's industrial drive to encourage local large-scale manufacturing of toilet components **MMDA Level** • Organise sanitation sales events and act as sales agents of sanitation products through units like the DWD and BAC	**National Level** • Leverage funds allocation to provide every MMDA with equipment (at least a vacuum truck) for emergencies and to provide services to institutions and as a backup service provider **MMDA Level** • Create a database of certified/ licensed service provides and ensure that households are required to use licensed service providers for emptying/ transport • Control and ensure proper fee fixing on services provided by licensed service providers for emptying and transport • MMDAs must own and maintain an emptying and transport service as a back-up to private service providers and for emergency purposes and institutions like schools, hospitals, etc.	**National Level** • Initiative projects that ensure the development of critical infrastructure that supports safely managed sanitation • Provide guidelines and support for MMDAs to develop Municipal Sanitation Improvement Plans, with an investment focus that addresses the Treatment and Reuse supply chain. • Awareness creation on end products of treated waste and license actors to promote sales of products. **MMDA Level** • Leverage private sector investments through PPP to ensure full-cycle management of sanitation by way of adopting appropriate treatment technologies • Establish facility user fees to cover the O and M of the facility through the "user-pay principle

Networking and Partnerships/ Business associations	**National Level** • Institute a multi-stakeholder platform to promote information sharing, knowledge exchange on toilet products/ technologies • Build partnership with sanitation NGOs/ CSOs implementing sanitation projects and programmes to provide support to sanitation business in the supply chain **MMDA Level** • Register all latrine artisans and businesses building toilets, towards the formation of an association to coordinate their activities. • Provide certifications for all registered members to ensure the construction of durable toilet facilities.	**National Level** • Strengthen partnership with ESPA to ensure the availability of emptying and transport services in all municipals. **MMDA Level** • Encourage Property owners to adopt appropriate emptying practices by linking households to licensed service providers • Register all Vacuum Truck operators and establish licensing modalities for operating emptying & transport services • Facilitate periodic trainings of service providers on safe and environmentally friendly service provision.	**National Level** • Institute a multi-stakeholder platform to promote linkage, information sharing, knowledge exchange on FSM practices **MMDA Level** • Link or form partnerships between Emptying and transport services and treatment facilities to ensure proper desludging or disposal
Access to Information	**National Level** • In collaboration with sector stakeholders, organize sanitation fairs every 3 years to showcase a range of available sanitation products and sanitation services providers **MMDA Level** • Encourage local governments to establish sanitation markets to promote toilet options and sanitation businesses	**MMDA Level** • Make information about certified/ licensed pit emptying services providers available to households, property owners	**National level** Provide adequate information on the technologies and immediate use of end products through adverts, workshops, etc. **MMDA Level** • Discussions at MMDA General Assembly Meetings

Cost Reduction/ Resource support	**National Level** • Provide tax incentives to artisans, SPIs, and local manufacturers of toilet products due to the competitive nature of the market • Facilitate initiatives to provide toilet artisans with products and materials at the supplier's price **MMDA Level** • MMDAs can provide toilet molds and construction tools for all registered artisans registered and licensed by the municipal • MMDAs should seek partnerships to deliver subsidized toilets targeting the poor and vulnerable households	**National Level** • Tax reliefs for start-up emptying and transportation service delivery **MMDA Level** Regulation of service providers through licensing to ensure that these service providers do not form a cartel	**National Level** • Tax reliefs for private entities who are operating or building treatment facilities for a non-viability period of operations • Support the development of treatment facilities in MMDAs by providing standards and guidelines to guide PPP arrangements
Capacity Building/ Training Mentoring for Businesses/ Entrepreneurs	**National Level** • Conduct training needs assessment for the supply chain • Map out ongoing capacity building efforts by CSOs/ NGOs in the supply chain • Develop training modules based on training needs assessment and skill gaps in the supply chain • Facilitate existing learning alliance platforms activities towards providing direction for capacity building for the supply chain	**National Level** • Conduct training needs assessment for the supply chain • Map out ongoing capacity building efforts by CSOs/ NGOs in the supply chain • Develop training modules based on training needs assessment and skill gaps in the supply chain • Facilitate existing learning alliance platforms activities towards providing direction for capacity building for the supply chain	**National Level** • Conduct training needs assessment for the supply chain • Map out ongoing capacity building efforts by CSOs/ NGOs • Develop training modules based on training needs assessment and skill gaps in the supply chain • Facilitate existing learning alliance platforms activities towards providing direction for capacity building for the supply chain
Quality Assurance and Technology Support	**National Level** • Establish product and material standards for constructing different technology options **MMDA Level** • Establish quality assurance teams at MMDA to certify works done by toilet artisans and contractors by using existing units Works department, EHSU, BAC.	**MMDA Level** • Periodic inspection and certification of equipment • Improve enforcement/ incentives for following regulations for emptying and transport	**MMDA Level** • Periodic Inspection and certification of equipment • Improve enforcement/ incentives for following regulations for wastewater reuse

Research, Development, & Innovation	**National Level** • Facilitate partnership between research institutions and governments to develop innovative toilet technologies and products • Partner INGOs working towards delivering affordable but appropriate toilet options for poor urban households	**National Level** • Facilitate partnership between research institutions and governments to develop innovative technologies and improve services.	**National Level** • Facilitate partnership between research institutions & governments to develop innovative toilet technologies and products.
Cost recovery mechanisms and Sustainability	**MMDA Level** • Public toilets owned by local authorities are leased out to the private sector under service contracts for operation and maintenance according to a set of defined performance indicators.	**National Level** • Award system for best performing service providers. **MMDA Level** • Provide technical advice to ensure that they have access to the most effective equipment for emptying pits.	

6.4.2 Financing

- **Self-financing**: Along with enhancing premises inspections and enforcement of the environmental sanitation bye-laws, MMDAs would take the lead in raising the profile of sanitation among households through software activities (demand creation and behaviour change communication). The improved enforcement and awareness campaigns are expected to encourage households to utilise their resources for the construction and operation of on-site sanitation infrastructure.

- **Subsidy financing:** The provision of full asset-based blanket sanitation subsidy would be discouraged in urban areas due to severe limitations such as creating dependency syndrome and sustainability concerns. However, public and donor funding would be leveraged to provide subsidy support targeted at vulnerable households living in low-income urban communities, to own toilet facilities where subsidy should constitute only a percentage of the total construction cost of the facility. The beneficiary households would be identified through strict selection criteria in the form of means-testing and community-based targeting anchored on the principles of transparency, efficiency, and equity. A higher rate of subsidy could thus be targeted to those destitute, while small subsidies could be hidden in zero-interest loans for those transiting from open defaecation to building basic toilets, or low-interest loans for those moving up the sanitation ladder.

- **Microfinancing:** On the supply side, financial institutions would be incentivised through guarantees from sources that include but not limited to the National Sanitation Fund for the provision of subsidized 'toilet' loans to households and sanitation businesses (hardware manufacturers, wholesalers/retailers, vacuum truck operators) for sanitation-related investments. On the demand side, households and sanitation businesses through demand generation will be exposed to the range of available alternative sanitation financing options including microfinancing.

- **Public-Private Partnership:** PPP arrangements where the private sector partner provides substantial funding would be utilised for the development of waste treatment and reuse infrastructure across urban areas in Ghana. The design, construction, and management of waste treatment and reuse facilities would consider life-cycle costing that would ensure the sustainability of the sanitation investments. Tariffs comprising cross-subsidisation among users of the treatment facilities would cover the capital and operational expenditure of the treatment facilities.

Table 15: Framework for Financing Urban Sanitation Services

Key Approaches	Delivery Blueprints		
	Capture and Containment	**Emptying and Conveyance**	**Treatment and Reuse**
Self-Financing **Property owners (residential, commercial, institutional) use their resources (funds, labour, materials) to build, operate and maintain toilet facilities (including paying for emptying/ desludging services)**	**Recommended for on-site sanitation investments but not suitable for collective sanitation (sewerage systems)** ***MMDA Level*** • Identify properties (residential, commercial, institutional) with no toilet facilities through regular sanitary inspections • Target landlords, owners, managers of properties (residential, commercial, institutional) with no toilet facilities for demand creation and behaviour change communication campaigns • Encourage landlords/ owners/ managers of properties (residential, commercial, institutional) through demand creation and behaviour change communication campaigns to use own resources to build toilet facilities • Undertake social marketing initiatives that involve communicating to landlords/ owners/ managers of properties the cost of various technology options for informed decisions • Issue certificate of occupation to new properties that contain sanitation facilities that meet minimum regulatory standards	**Recommended for pit emptying and transportation services** ***National*** Promote the operation and maintenance of on-site sanitation (pit emptying /desludging services) as the responsibility of property owners and/or tenants ***MMDA Levels*** Create a database of licensed pit emptying services providers (vacuum truck operators) Make information about certified/ licensed pit emptying service providers available to households, property owners Encourage property owners (residential, institutional) and households to access pit emptying services from certified/licensed vacuum truck operators Encourage households to contribute to the operation and maintenance of their facilities Liaise with vacuum truck operators and/or their association to set realistic tariffs for pit emptying services	**Not recommended for capital investments in waste treatment and reuse/ recovery facilities because of the required initial financial outlay** ***MMDA Level*** • Apply 'user-pay principle' to raise funds which should be ring-fenced to cover the capital and operational cost of waste treatment and reuse/recovery facilities

Self-Financing + Subsidy **Property owners (mostly households living in low-income urban communities) contribute (cash and/or in-kind) to supplement external support (from Government, NGOs, etc.) to build a latrine**	**Recommended for on-site sanitation investments** ***National Level*** • Develop policy guidelines for subsidy support anchored on the principles of transparency, fairness, and efficiency ***MMDA Level*** • Identify and target vulnerable households and marginalized individuals, groups (elderly, persons with physical challenges/ disabilities, persons below poverty line) for output-based subsidy support for latrine construction	**Subsidy not recommended for pit emptying and transportation services** ***National & MMDA Levels*** • Promote the operation and maintenance of on-site sanitation (pit emptying/desludging services) as responsibility of property owners and/ or tenants	***National Level*** • Develop national tariff policy on user charges for waste disposal, treatment, and reuse/recovery facilities
Self-Financing + Microfinance **Property owners contribute cash and/or in-kind to supplement loans and/or microcredit from financial institutions to build a latrine**	***National Level*** Provide financial awareness campaigns, training, and education to expose consumers to a wide range of sanitation finance options, including accessing loan/ microcredit to build latrine ('toilet loans') Provide guarantees (National Sanitation Fund) to incentivize financial institutions to offer credit facilities at lower rates to property owners and businesses for sanitation investments Build the technical and operational capacity of MFIs to identify the business potential along the various stages in the sanitation chain, sanitation loan appraisal, and repayment arrangements ***MMDA Level*** Create and update a database of financial institutions or financial service providers in the District, Municipality or Metropolis	***National Level*** • Provide guarantees (using but not limited to the National Sanitation Fund) to incentivize financial institutions to offer credit facilities to small scale sanitation service providers (vacuum truck operators)	***National Level*** • Provide guarantees (using Funds such as the National Sanitation Fund) to incentivize financial institutions to offer credit facilities to entrepreneurs of waste reuse/recovery

	• Undertake social marketing campaigns to introduce financial service providers to households and sanitation businesses and/or link households & businesses to financial institutions for 'toilet' loans		
Self-Financing + Supplier Credit Property owners contribute cash and/or in-kind to supplement hardware received from suppliers on a credit basis to build latrine	***MMDA Level*** Provide financial training for sanitation entrepreneurs (manufacturers, wholesalers, retailers) on viable business models Enforce relevant bye-laws and regulations Provide technical assistance to households or property owners		
Full Subsidy **Households receive full external support (from Government, NGOs, etc.) to build latrine**	***National Level (MSWR)*** Develop policy guidelines for subsidy support anchored on the principles of transparency, fairness, and efficiency ***MMDA Level*** Leverage funds from central government (National Sanitation Fund), DPs, Private foundations, and corporate businesses (Corporate Social Responsibility – CSR funds) to provide full subsidy support targeted at the most vulnerable population for which self-financing supported by partial subsidy is not feasible. Provide subsidy for sanitation investments based on demand rather than supply-driven approach	**Subsidy not recommended for pit emptying and transportation services** ***National & MMDA Levels*** • Promote the operation and maintenance of on-site sanitation (pit emptying/desludging services) as responsibility of property owners and/or tenants	***National Level*** • Develop national tariff policy on user charges for waste disposal, treatment, and reuse/recovery facilities

PPP Arrangements **The contractual agreement between public entity and private entity in the delivery of sanitation service(s) traditionally provided by the public sector.**	***National Level (MSWR)*** • Advocate for the passage of the PPP Bill into an Act of Parliament to give PPP sound legal backing for sanitation investments • Develop policy guidelines for PPP arrangements for sanitation investments • Promote PPP for sanitation delivery services ***MMDAs*** • Promote PPP for investments in public latrines (bus terminals/'lorry stations', market centres, railway stations, parks, community centres, and other public places, etc.) where the role and responsibility of the private sector partner includes but not limited to the provision of substantial financing	***MMDA Level & Private Sector Partner*** • Utilize user fees/charges to cover operating costs (including pit emptying/desludging services)	***National Level*** In consultation with sector stakeholders, develop tariff policy for use of waste disposal, treatment, and reuse/recovery facilities. ***MMDA Level*** Apply PPP arrangements for faecal sludge treatment and reuse/recovery facilities In consultation with private sector investors and consumers/ users, set user charges that are affordable, fair, and sustainable Apply direct cost recovery from users to cover capital and operational costs of treatment facilities Where full direct cost recovery is not feasible, MMDAs should provide subsidies to make up for the running cost of facilities Undertake periodic review of local tariffs to ensure waste treatment and reuse/ recovery service charges are cost-effective and affordable for the different customer segments

Municipal Finance +Donor Funding **Contributions jointly made by Government (through MMDAs and MDAs) and Development Partners (International Donors) for sanitation investments**	***National Level*** • Engage with Development Partners (Bilateral, Multilateral) to source funding support to complement Government Funds for sanitation investment • Facilitate central government transfers and donor funding to local assemblies for urban sanitation plans and implementation ***MMDA Level*** • Establish a specific budget for advocacy, capacity building, social marketing, prosecution and enforcement, institutional sanitation infrastructure (schools, clinics)	***National Level*** Provide seed funding for revolving fund to support sanitation businesses along the sanitation value chain (e.g., vacuum truck operators) ***MMDA Level*** Establish District Sanitation Fund to provide Results-Based Financing (RBF) for local private sanitation entrepreneurs (hardware manufacturers, latrine artisans, vacuum truck operators)	***National Level*** • Advocate for increased central government transfers and IGF from the present levels for investment in waste disposal, treatment, and reuse facilities • Engage with bilateral, multilateral, and private foundations to raise additional funds to supplement Government's investments
Private+ Municipal Finance/Central Government Finance +Donor Funding **Contributions jointly made by Government (through MMDAs & MDAs) and Development Partners (International Donors) and private sector entities for sanitation investments**	***National Level*** Engage with Development Partners (Bilateral, Multilateral) to source funding support to complement Government Funds for sanitation investment ***MMDA Level*** Establish a specific budget line for promoting household sanitation Engage NGOs/CBOs/CSOs operating in the area for funding for district-wide sanitation interventions	***MMDA Level*** Establish a revolving fund for local private sanitation entrepreneurs (hardware manufacturers, vacuum truck operators) Channel donor funding (including NGO funding) in a coordinated manner for optimum use in sanitation investments and programmes	***National Level*** Advocate for increased government transfers and investment in waste disposal, treatment, and reuse facilities Engage with bilateral, multilateral, and private foundations to raise additional funds to supplement Government's provision Mobilize funding from private companies operating in the territory (e.g., CSR Funds) for investments in waste treatment and reuse/ recovery facilities

7. MONITORING, EVALUATION, AND LEARNING

7.1 Introduction

Monitoring and Evaluation (M&E) is a key function for implementing the strategy, as it helps to compare the current situation against the objectives and learn from past and on-going projects. Without an effective monitoring and evaluation system, the strategy cannot be updated or reviewed. See Box 6 for a summary of the criteria for effective monitoring and evaluation. The existing Monitoring and Evaluation structure for the sector is disjointed and requires standardisation.

Box 6: Criteria for Effective Monitoring and Evaluation System

The criteria for an effective monitoring and evaluation system are as follows:

- The system must consistently cover the entire country.
- The information collected must be available to all stakeholders.
- Information must be reliable (not necessarily comprehensive but reflecting the reality in the field).
- Indicators must be clearly defined and explained so as to be meaningful to any user of the information.
- The system must enable stakeholders to draw lessons from the information collected (and thus make links between programming/ approaches and outputs when possible).
- The system must be sustainable (long-term monitoring).

7.2 Rationale and Objectives

The objectives of the proposed Monitoring and Evaluation System defined under this strategy will have the following objectives:

- To establish the nature of data required to track and measure the different components of sanitation service delivery in a comprehensive manner.
- To identify the approaches, methods, processes, and mediums that should be adopted to capture accurate and reliable data on sanitation delivery.
- To provide guidance on the range of data to be captured at various operational levels and the capacity required to undertake effective monitoring and evaluation.

7.3 Critical Elements and Requirements

To fulfill the criteria for an effective monitoring and evaluation system, all stakeholders must implement a monitoring model that is capable of feeding into a central monitoring system at the **national level**. This will require several mandatory elements:

- All monitoring systems must include a minimum set of data that addresses the monitoring needs at the **national level**.
- The definition of shared indicators must be consistent across all projects.
- Monitoring data collected during a project must be made available to an entity that will remain active after the project.

The indicators must cover the entire sanitation chain (including services and final treatment), not only access to toilets. This must include requirements under the SIS (and must be compatible with the ESICApp Tool).

7.4 Delivery Approaches for Monitoring and Evaluation Systems

Urban sanitation projects in Ghana generally use two types of M&E models:

i. The first model is infrastructure-oriented, with indicators linked to the number of toilets constructed (outputs), the number of toilets, the number of households (coverage), or the number of households claiming to have access to toilets. Most of them are targeting capture and containment and very few are covering the other aspects of the sanitation chain.

ii. The second model seeks to monitor the overall operation of the sector by looking at the active input of the sector stakeholders, the scope and strength of the required service offers (by the private sector), and the conditions required for the market to deliver results (enabling environment).

Both models provide useful information for monitoring, but also have their limitations, as detailed in Table 16. The aim of this strategy is not to choose one of the models over the other, but rather to propose an enhanced M&E system by combining elements of both models. An enhanced M&E system, with these building blocks (as shown in the models) will ensure better information on urban sanitation and help identify the weak link in the chain (whether it is access, services, financing, enabling environment, etc.). Projects would therefore need to monitor access, not only to infrastructure but also, to services. They also need to monitor how financing and the enabling environment evolve during the interventions. These parameters must be clearly defined in the project's Monitoring and Evaluation system.

Figure 5: Enhanced Monitoring and Evaluation System

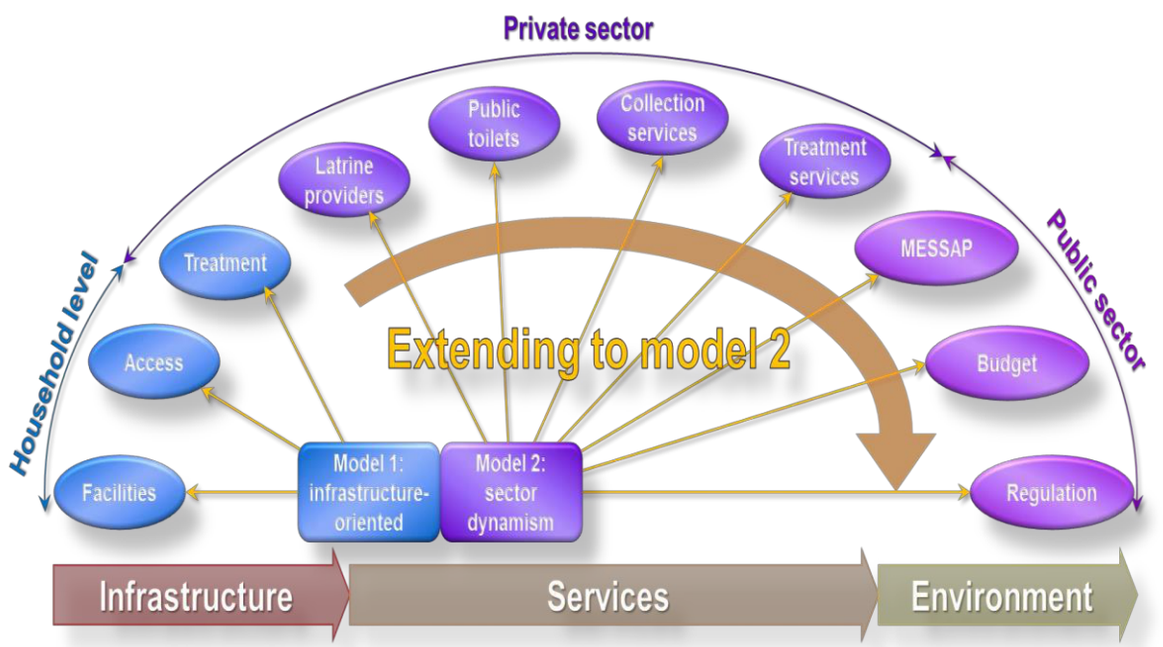


Table 16: Set of Indicators for Model 1

	Indicators	Definition	Database Level	Collection Level	Frequency
1.1	Percentage of population with access to basic toilet facilities (Golden Indicator #2)	The output for this indicator will be the percentage of people who have access to basic services; this will be presented along with the percentage of people in the other categories (safely managed, limited, and open defecation).	National, Regional, Districts	MMDA Level	Survey: 1 every 2-3 Years
1.2	Percentage of Households etc. with the infrastructure (ESICApps)	The output for this indicator will be the percentage of households and facilities that have a toilet.	National, Regional, Districts	MMDA Level	Baseline + updates 1 every 2-3 years
1.3	Length of the sewer system	The output will be the number of kilometres of the sewer system	District level	MMDA Level	Baseline + Updated every year
1.4	Treatment Capacity of the WWTP and Sludge Treatment Plant	The output will be the Treatment Capacity in m^3/day	District level	MMDA Level	Baseline + Updated every year

Table 17: Set of Indicators for Model 2

	Indicators	Definition	Database level	Collection level	Frequency
Capture and Containment and other services					
2.1	Several artisans were trained by the MMDA.	The output for this indicator will be the number of artisans registered and certified by the MMDA. This indicator should have a sharp increase in the coming years and is likely to remain stable after slowing a bit.	Districts	MMDA Level	At the end of every year
2.2	Percentage of public toilets complying with their contract requirements.	The output for this indicator will be the percentage of public toilets that comply with at least 90% of their contract conditions during the control visits	Districts	MMDA Level	Twice per year

Table 18: Set of indicators for Model 3

S/N	Indicators	Definition	Database Level	Collection Level	Frequency
Collection and Emptying Services					
3.1	Number of registered/ licensed Operators for emptying services	The output will be the number of registered (or licensed depending on the MMDA) operators for emptying services and their capacities.	District level	MMDA Level	At the end of every year
3.2	Number of connections to the sewer systems	The output will be the number of connections to the sewer system disaggregated by households and enterprises + institutions. Since the user must remain central when considering infrastructure, this indicator is more relevant than the infrastructure-oriented or dedicated to Collection Services.	District level	MMDA Level	At the end of every year
3.3	Cost Recovery of the sewers systems	The output will be the percentage of the provision for renewal based on the Asset Management Plan of the system that is allocated. Control will depend on the manager of the system (Private/Public/Mix)	District level	MMDA Level	At the end of the year
Treatment and Reuse Services					
4.1	Percentage of the capacity level of the treatment plant	The output will be the annual volume of treated effluent compared to the design capacity of the treatment plant.	District Level	Treatment Plant	Every day for an annual report
4.2	Cost Recovery of the Treatment plants	The output will be the percentage of the provision for renewal based on the Asset Management Plan of the plant that is allocated.	District level	MMDA Level	At the end of the year
Regulation, Capacities					
5.1	Ability to update/reorient MESSAP roadmap	The output will be the collection and analysis of 80% of the data required to assess the targets of the roadmap. A roadmap setting new targets or new approaches will be prepared.	National level	MMDA Level	Every two years
5.2	The ability to differentiate between budgets for liquid/ solid sanitation	The output will be the capacity to present to central governments separate budgets for liquid and solid sanitation.	National level	MMDA Level	Every year
5.3	0.5% of Ghana's annual budget is disbursed for WASH (Golden Indicators)	The output will be the actual disbursements to the sanitation and hygiene subsector by the Government every year.	National level	National, MMDA Level	Every year
5.4	Ability to edit, disseminate and enforce regulations	The output will be the availability of appropriate by-laws and the number of prosecutions related to liquid waste	National level	MMDA Level	Every two years
5.5	Capacity Index Score for WASH delivery (Golden Indicators)	The output for this indicator will be the capacity index score for all units; there will be one score for the country, one each for the regions and the MMDAs.	National, Regional, District	MMDA, Ministry, Regional	Every year

7.4.1 General Recommendations for M&E System for Urban Sanitation

- **National level**

At the central level, there is the need for the M&E System to focus on basic but aggregated and well-standardised indicators. This is typically the case with coverage and (more desirably) access rates (as in the JMP). However, these indicators must be supplemented by those that are of interest to the national government (e.g., indicators about the enabling environment or governance). The MSWR should ensure that the Sector Information System (SIS)[6] has the architecture and data collection process that is capable of capturing all the required information on urban sanitation delivery. The ESICApps, which has been tried and tested for over two years in the urban setting should be supported by all stakeholders for its total rollout in all Urban areas to capture real-time data on environmental sanitation for planning and decision-making purposes. It is also recommended that the existing sector learning platforms be supported.

- **MMDA Level**

At MMDA levels, there is a greater need for more complex indicators, both for reflecting a contextual situation and for highlighting actions to be taken at that level. Thus, indicators must be tailored to the situation and the scope of actions that can be taken by a given MMDA. Moreover, MMDA is the best point of contact for development partners needing information for their preliminary studies (project identification and project formulation). MMDAs are therefore expected to collect data on all relevant indicators in the M&E system at the MMDA level to aid project design, financing, and implementation.

The MSWR (with the support of the MLGDRD) must work with MMDAs to set up a standardised M&E structure for urban sanitation. This should include a minimum set of indicators (from the golden indicators) that should be reported on by all MMDAs. The existing Management Information Systems such as the BASIS and [7]ESICApp, which have been tried and tested for over two years in small towns and the urban setting should be supported by all stakeholders for total roll out at the MMDA level to capture real-time data for planning and decision making. It is also recommended that projects or organisations should be encouraged and supported to organise MMDA level learning activities.

[6] The SIS is an M&E system for the WASH Sector to provide adequate information on access to water supply and sanitation services, the quality of those services and their sustainability.

[7] The ESICOME mobile applications tool termed ESICApp is being developed to enhance the already existing premises inspection functions of MMDAs under the ESICOME programme. The ESICApp is expected to provide real time information on access to basic sanitation and potable water as well as liquid and solid waste disposal methods in residential, food/restaurant and commercial premises among others and can easily be expandable accommodate other indicators.

8. SOCIAL INCLUSION IN LIQUID WASTE MANAGEMENT

8.1 Introduction

Women, Children, the disabled, the elderly, and the poorest in society suffer disproportionately from the effects of poor access to sanitation. With the current low levels of access in urban areas in Ghana, and the SDG goal of 'leaving no one behind, a pursuit of an inclusive urban sanitation model is appropriate and strategic. A strategy that makes provision for the peculiar needs of women, children of school-going age, disabled, elderly, and the poorest, which constitute more than 50%, 34.4%, 2.7%, 4.1%, and 1% of Ghana's urban population respectively (according to 2010 PHC[8] and GLSS 7[9]), is likely to achieve universal coverage much quicker. An inclusive urban sanitation strategy will also guarantee a safe, resilient, and sustainable living environment contributing to a fair and just society[10].

An inclusive approach to urban sanitation will, for example, minimise the burden on caregivers, reduce the acquisition and spread of diseases (through support to the vulnerable), contribute to a safe school environment (especially for girls) leading to improved learning outcomes. It is also estimated that the cost of exclusion in the WASH sector is far higher than the marginal cost increase (sometimes up to 3%[11]) associated with inclusive or universal designs. Inclusive WASH approaches are therefore more efficient and cost-effective. Notwithstanding national, project, and facility-level interventions, these vulnerable groups still face significant barriers in accessing sanitation services.

8.2 Rationale and Objectives

The proposed inclusive approaches for the liquid waste management model will, therefore, seek to achieve the following objectives:

- To ensure that the vulnerable and excluded groups participate in the discourse on urban sanitation.
- To ensure that the needs of the vulnerable and excluded groups are identified and responded to in all urban sanitation solutions.
- To ensure that all persons – including women, children, the disabled, and elderly – are able to access sanitation facilities and services (with no or minimal support).

8.3 Critical Elements and Requirements

Based on findings of the diagnostic and comparative reports, and best practices, the proposed approaches, or models (in this document) and various variations that might be introduced or implemented by stakeholders must meet at least one of the following critical criteria:

[8] GSS, 2010, Population and Housing Census (PHC), GSS and GSS, 2010, Ghana Disability Report, GSS
[9] GSS, (2018) Ghana Living Standards Survey 7, GSS
[10] CMB, (n.d), A Quick Programme Guide to Disability in Development, UNICEF (n.d), WASH Disability Inclusive Practices; UNICEF-GOG, (n.d) Gender Mainstreaming Guidelines and Toolkits for the WASH Sector
[11] CMB, (n.d), A Quick Programme Guide to Disability in Development

- **The strategy must create awareness:** all persons must be aware of the special needs of the vulnerable and implications for their health and social existence. The model must also ensure that all persons within the vulnerable group are aware of the support available to them and how they can take advantage of such support systems.
- **The strategy must ensure the participation of vulnerable groups:** all (including vulnerable and excluded groups) must be active participants in discourse or decisions regarding urban sanitation delivery. The model must, therefore, strengthen existing inclusive governance practices or introduce new ways of ensuring participation for the vulnerable at national and sub-national levels.
- **The strategy must ensure comprehensive accessibility:** the approach must work towards comprehensively addressing all the physical, communication, attitudinal, and policy barriers of the vulnerable groups. The approach must seek to address multiple of these barriers.
- **The strategy must make use of a "twin-track approach":** the approaches must not only be designed to identify and address the specific needs of the vulnerable but must also endeavour to mainstream their concerns and needs (e.g., using universal design principles[12]).
- **The strategy must use a stepwise targeting approach:** means-testing is the most reliable and scientific targeting mechanism. In the absence of reliable household data, the proposed strategy adapted the most applicable elements of the geographic and community-based targeting approach depending on the availability of time and resources.

8.4 Delivery Approaches for Women (including girls), Children, Disabled and Elderly

8.4.1 Overview of the Challenges faced by Women, Children, Disabled and Elderly

Results of the review of baseline and evaluation reports of urban sanitation projects, and the diagnostics study conducted in line with this strategy revealed that the following challenges faced by the identified vulnerable groups:

- ***Women, Girls, and Children:*** The general lack of household/compound toilets leave women and children with no other option but to use public toilets which are usually are not adequately equipped for their use; the lack of segregation of compound toilets compromise the privacy and safety of users (especially women and girls); the continuous design and construction of compound and household toilets without child-friendly features – making it unsafe and unhealthy for children; some public toilets lack gender sensitive features that will guarantee the convenience, health and safety of women.

[12] Universal Design is the design and composition of an environment so that it can be accessed, understood, and used to the greatest extent possible by all people regardless of their age, size, ability or disability. The seven basic principles of universal designs are: equitable use; flexibility in use; simple and intuitive use; perceptible information; tolerance for error; low physical effort; and size and space for approach and use.

- ***Disabled and Elderly:*** The study showed that about 46.7% of households with PWDs have no toilets in their homes. These results reveal the struggles such households and PWDs go through meeting their daily sanitation needs. Related to this category of the vulnerable and excluded are the elderly, who are physically impeded because of old age or an age-related sickness. Specific challenges identified were the absence of disability (aged) friendly installations in existing compound and public toilets; and squat toilets interfaces, which are generally not suitable for the peculiar needs of the disabled and the elderly.

- ***The Poorest Households:*** The poorest urban dwellers (households within the poorest wealth quintile) lack access to basic sanitation services since access is determined by both availability of facility and affordability (determined by cost and income). This is confirmed by the JMP (2017) results, which reveal that only 10.6% of the poorest quintile have access to basic sanitation in urban areas in Ghana. It further reveals that 52.4% of the poorest quintile of urban households have access to limited sanitation facilities, 13.4% have access to unimproved facilities, and about a quarter (23.6%) practice open defecation. Additionally, the high cost of available toilet options; lack of national-level database on poor households; Lack of inclusive policy framework, and well-tested targeting mechanism for urban sanitation have hindered efforts to effectively target the poor and deliver sanitation services to them.

Based on the results of the comparative study of inclusive and targeting approaches used in delivering urban sanitation to the vulnerable groups, the following critical recommendations are made: the approaches of inclusive sanitation are largely complementary, working towards advocating, participation and universal or targeted services to the excluded and vulnerable sections of society; need to adopt universal designs in the provision of sanitation services; in the absence of a reliable data for means-testing and adaptable approach which combines elements of the geographic and community-based systems must be utilised; the need for the strategy to provide a comprehensive framework to guide the coordination and supervision role of the MSWR; targeting the poor and other vulnerable groups require collaboration with other state and non-state agencies with interest in delivering basic services to the poor. These recommendations guided the drafting of critical requirements and the interventions under this section.

8.4.2 Proposed Recommendations for Improving Inclusion

Based on the challenges identified and expected outcomes, the liquid waste management strategy proposes three broad social inclusion approaches (for service delivery targeted at Women, Children, Disabled and Elderly) as follows: Inclusion through Participation, Inclusion through Advocacy, and Inclusion through Service Provision. It is envisaged that these approaches, implemented together, will drive the country towards universal access to sustainably managed urban sanitation and improve public health. Tables 19 and 20 show delivery blueprints for delivering sanitation services to Women (including Children), and the Disabled (including the elderly) respectively.

Table 19: Delivery Blueprints for Women (Including Women and Children)

Key Approaches	Delivery Blueprints (key steps)		
	National level	**MMDA Level**	**Community Level**
Inclusion through Participation	• Work with Existing Women and Child-focused groups to develop gender and child participation indicators for urban sanitation. • Build capacity of key project staff in inclusive sanitation	• Involve women and children in sanitation-related forums and BCC activities • Consciously recruit women for sanitation-related capacity building activities • Consciously recruit women for WASH interventions along the value chain • Make gender and child participation indicators mandatory process indicators for urban sanitation-related projects	• Ensure women/children are adequately represented on any sanitation-related Management Committee/ Team. • Include children in school facility management committees • Involve women and children in community-level sanitation activities • Involve children in community-level project monitoring and evaluation activities
Inclusion through Advocacy	• Build the capacity of advocacy groups in inclusive sanitation • Advocate for gender and child-friendly domestic and public sanitation facilities • Coordinate with ministries and regulatory bodies (like Ministry of Works and Housing, Ministry of Education, Ministry of Health, etc.) to ensure the construction of gender and child-friendly toilets in Schools and Health care facilities. • Advocate for budgetary support for gender/ child-friendly sanitation services and facilities	• Create platforms for identified women and children's groups to advocate for inclusive sanitation issues (including the peculiar needs of women and children within the urban sanitation space) • Facilitate capacity building in Inclusive Sanitation for Assembly members especially Assembly Staff, and Assembly Members (especially the members of the social services sub-committee) • Identify champions for gender and children issues e.g., DCE, SHEP coordinator, Paramount Queen mother, etc. • Advocate for Gender and Child-friendly urban sanitation facilities or services in urban areas within the MMDA, including Schools and Healthcare Facilities.	• Identify community level champions, e.g., natural leaders, assemblymen, traditional authorities, religious leaders. • Build capacities of champions in WASH issues and advocacy (for inclusive WASH). • Support champions to advocate for gender/ child-friendly sanitation facilities • Create awareness on gender and child-related issues in sanitation • Eliminate discriminatory cultural practices and norms that have implications on women and children to improved sanitation and hygiene services. • Include gender/ child-friendly issues in the implementation of community-level evaluation activities (e.g., scorecards).
Service provision using the twin-track approach	**Planning for Sanitation Services** • Identify and promote innovative gender and child-friendly sanitation facilities and services • Approve only children and gender-sensitive designs and contracts (for sanitation facilities).	**Planning for Sanitation Services** • Identify and promote innovative gender and child-friendly facilities and services • Approve only children and gender-sensitive designs and contracts (for the provision of sanitation facilities)	**Planning for Sanitation Services** • Identify and promote innovative gender and child-friendly approaches proposed by community members

	Delivering Promotional Activities & Communication • Identify and promote gender and child-friendly communication materials and modes	**Delivering Promotional Activities and Communication** • Identify and promote gender and child-friendly communication materials and modes	**Delivering Promotional Activities and Communication** • Use gender and child-friendly communication materials in sanitation durbars and meetings.
	Delivering Public Services and Facilities •Conduct gender and child-friendly audits of public sanitation facilities •Promote universal design principles •Build only gender and child-friendly sanitation facilities.	**Delivering Public Services and Facilities** • Ensure child and gender-related issues are included in designs and contracts for institutional sanitation facilities (including facilities for public areas). • Conduct gender and child-friendliness audits of all public sanitation facilities. • Promote universal design principles and build gender and child-friendly facilities	**Delivering Public Services and Facilities** • Approve only gender and child-friendly designs. • Build Gender and Child-Friendly Sanitation Facilities
	Delivering Household and Compound Services and Facilities • Encourage the use of universal design principles in designing compound and household toilets • Promote gender and child-friendly sanitation components or accessories (through the reduction of tax rates and targeted subsidies) • Approve only gender and child-friendly designs for projects	**Delivering Household and Compound Services and Facilities** • Encourage the use of universal design principles in designing compound and household toilets • Approve only gender and child-friendly designs for facilities within MMDA • Train latrine artisans or contractors in gender and child-friendly toilet designs	**Delivering Household and Compound Services and Facilities** • Encourage the use of universal design principles in designing compound and household toilets • Build only gender and child-Friendly compound and household toilets
	Monitoring and Evaluation • Include gender and child-related indicators in the M&E framework of the MSWR	**Monitoring and Evaluation** • Enforce regulations regarding minimum standards in the construction of Institutional Sanitation Facilities	**Monitoring and Evaluation** • Report on gender and child-friendliness of household and public sanitation facilities
Main Actors	• Officials of MSWR, Local Government Service, Ministry of Local Government, Ministry of Health, and Ministry of Education, Ministry of Gender, Children and Social Protection, etc.	• DWSTs, EHO/As, SHEP Coordinators, Community Development Officers or NGOs, etc.	• Assembly Persons, Traditional Authorities, WATSAN Committees, CBOs, School Health Coordinators, Health Workers, etc.

8.5 Delivery Approaches for Targeting the Poorest Households

The proposed targeting mechanism utilises applicable elements of means-testing, geographic, and community-based targeting. The process allows for the targeting of varied amounts of subsidies to areas and individual households. It is also designed to be anchored at the MMDA level, where frontline WASH and community development officials are mandated and resourced to lead the process.

- **Step 1:** Project Managers (e.g., Ministry, MMDA PCU, DP, NGO, or CBO) should initiate the process of targeting the poor in an urban community by holding a joint meeting with the MMDA Team (consisting of Environmental Health and Sanitation Unit, Planning Unit, Physical Planning Department, Community Development, Representative of Traditional and Community Leadership, and Social Welfare Departments). This meeting will discuss the resources available, expected number of beneficiaries, previous pro-poor interventions, project timelines, and targeted areas among others.
- **Step 2:** map out low-income and WASH poor areas within MMDA. This should be done with the support of the Physical and Development Planning Units. If poverty and basic services maps already exist, then skip this step.
- **Step 3:** collate Existing List of Poor Households (Using LEAP Database, and list of beneficiaries of other social intervention programmes). This list should be collated and lodged with the Environmental Health Officer.
- **Step 4:** task Environmental Health Officers, Community Health Workers, Headteachers and Teachers and, Community Development Officers to identify and submit a list of poor households within areas of work. Provide a guidance note for the identification and capturing process.
- **Step 5:** work with community leaders – religious leaders, traditional authorities, and CSOs working within communities to identify poor/poorest households within communities (using criteria provided in the MSWR's guideline for targeting the poor and vulnerable[19])
- **Step 6:** collate the list of potential beneficiaries from primary and secondary sources.
- **Step 7:** locate and verify the listed beneficiaries.
- **Step 8:** finalise and categorise households (into poor and very poor households] based on approved criteria. The finalised list will then be lodged with the Development Planning, Social/Community Development, and Environmental Health Units of the MMDA.
- **Step 9: t**arget the highest available subsidy to the poorest and most deprived households in the first round of interventions. Depending on resource availability, the rest of the residents in targeted low-income communities can be supported with a partial subsidy. Preferably, the support should be given after an appreciable number of community members have been able to build their latrines, to avoid the usual wait-for-my-turn syndrome. The entire process of supporting the poor should be hinged on continuous education and interaction with beneficiary, non-beneficiary, and community leadership on why the poorest and vulnerable among them are going to be supported.
- **Step 10:** Monitor and review targeting mechanism and processes (using community-based evaluation approaches such as community scorecards).

Table 20 shows specific activities that must be implemented at the various levels of the sanitation governance to guarantee the urban poor's access to good sanitation.

Table 20: Delivery Blueprints for targeting the poorest in urban areas

Key Approaches	Delivery Blueprints		
	National level	**MMDA Level**	**Community Level**
Targeting the Poorest	• Establish an inclusive WASH /Pro-poor desk at the MSWR (assign an officer of at least the rank of an Assistant Director to manage it) • Task the assigned officer to work with the MoE, MoH, MWH, MESTI, MLGDRD, and MOGSP on inclusive/ pro-poor related sanitation Issues. • Develop a set of criteria for community-based targeting ○ (Criteria should include housing characteristics, employment status, access to water, sanitation, disability, Age of household head, Sex of household head, Number of dependents, etc.). • Promote low-cost (but durable) safely managed toilet options.	• Identify and Map-out poor communities within municipalities (using housing characteristics, income levels, access to basic services - water and sanitation, etc.) • Compile all the list of beneficiaries of all other pro-poor interventions - LEAP beneficiary households' resident in MMA (targeted low-income communities) • Obtain other poverty targeting related lists used within the MMDA • Task and support Environmental Health Officers/Agents, Health Departments (Community Health Nurses), Education Officers - SHEP/ Girl-Child/ Special Education Coordinators at GES to identify and report on poor households within MMDA. • Target subsidies to the poorest households and promote low-cost safely managed toilets	• Support traditional authorities, religious bodies, Educational Authorities, and CBOs to identify and document the poor in communities. • Support MMDA Officials to validate the final list of beneficiaries • Support project implementers and MMDA officials to locate selected beneficiaries. • Report corrupt practices or malpractices in the targeting of subsidies • Participate in the implementation of scorecards to review pro-poor targeting mechanism
Main Actors	• Ministry of Sanitation and Water Resources, • Ministry of Gender, Children and Social Protection, • Ministry of Education, • Ministry of Health, • Ministry of Environment, Science, Technology, and Innovation	• Environmental Health Officers/Agents, • Community Development Officers, • Girls-Education Coordinator, • SHEP Coordinators, • Special Needs Coordinators, • Community Health Nurses, etc.	• Traditional Authorities, • Religious Leaders, • Headteachers, • Teachers, • Community Volunteers, etc.

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